Solanum Balbisii.

Mme Withers del.

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The BOTANIST;

CONSISTING OF

Highly finished Representations

OF TENDER AND HARDY

Ornamental Plants;

WITH

Descriptions, Scientific and Popular, intended to convey both Moral and Intellectual Gratification.

CONDUCTED BY B. MAUND, F.L.S.
ASSISTED BY
THE REV^D. J. S. HENSLOW, M.A.F.L.S.
REGIUS PROFESSOR OF BOTANY
IN THE UNIVERSITY OF CAMBRIDGE.

Vol. I.

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"The World seems to have discovered that nothing about which Infinite Wisdom has deigned to employ itself can, properly speaking, be unworthy of any of its creatures, how lofty soever their pursuits and pretensions may be."

SIR J. E. SMITH.

Mo. Bot. Garden,
1896.

LONDON:

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PREFACE.

THIS is not the age in which it is necessary to offer a laboured defence in favour of any particular branch of Natural Science, much less to point out the peculiar claims which the Study of Botany possesses on general attention. If one source of human happiness may be clearly allowed to flow from the proper employment of our time, then has Paley rightly observed, that "Any engagement which is innocent is better than none—even the raising of a cucumber or a tulip." But apart from such and all other considerations, there is a natural charm in the peaceful pursuits of Horticulture, which cannot fail to excercise a salutary effect upon the mind. The beneficent intentions of Providence are nowhere more clearly to be understood than in the many testimonies of power and wisdom shown us by the great Creator in the exquisite symmetry and manifest design exhibited in the organic structures of different plants; and few who employ their leisure in the delightful recreation which the culture of flowers affords, can fail of experiencing the effects which a more intimate acquaintance with the works of God are calculated to produce upon the minds of his intelligent creatures. But still whatever be the degree of satisfaction which naturally flows from these sources, it may always be greatly enhanced by the superaddition of some portion of scientific acquirement. However pleasing to the eye the curious structure and exquisite colouring of a flower may be, we can feel nothing of that still higher interest which flows from the possession (however imperfect) of some degree of knowledge respecting the relation which each individual species bears to others in the general scheme of nature. Infinite wisdom alone could so have contrived such endless diversity of form, and strange complexity of structure, that all should, nevertheless, be referable to a few general types, still further connected by certain simple laws regulating the arrangement of the subordinate parts according to fixed principles.

If together with a knowledge of the general structure of plants, and the method of grouping them systematically, the cultivator will combine some degree of information respecting their physiological condition, a force and meaning will be given to the most trifling operations of horticulture, far beyond anything which an empirical rule, the result of practice and experience, can possibly supply. He may then connect a series of well-directed experiment or observation with the commonest routine of garden culture, and may soon lay up a store of facts calculated to establish or refute many of the uncertain points in vegetable physiology. It is true that greater care and diligence are necessary for conducting most experiments than Florists are generally inclined to bestow, but even without entertaining any such object, a knowledge of those laws of vegetation which are already well established, must necessarily increase the intellectual enjoyments to any one who is attached to gardening pursuits.

We will venture yet further, and attempt to uphold another important claim which our favourite pursuit possesses upon the general attention. To a mind impressed with the belief in the infinite wisdom and goodness of the Creator, Botany affords a perpetual source of the very highest description of mental gratification, in the never-ending proofs it unfolds of an all-pervading intelligence—in the numberless examples it affords of those marvellous contrivances by which means are palpably employed to secure an end—in the striking instances it exhibits of that universal harmony which prevails between the works of God, and of the mutual dependance in which one part of the Creation subsists with respect to another. These claims have long been acknowledged, and the pious and excellent John Ray, the father of the modern school of Botanists, in his work on the Creation, has offered convincing arguments in support of them, derived from the resources at his command more than two hundred years ago. Since his day our science has assumed a new garb—almost innumerable treasures have been pouring in upon us from every quarter of the globe, and physiological, geographical, and fossil, botany are departments of very recent birth. If he then could derive arguments in favour of Divine Wisdom and Goodness, from a contemplation of the comparatively scanty materials in his possession at the period when he was running his earthly career of humility and usefulness, we ought not to be backward in avowing and proclaiming the same lesson, with our improved demonstration of its truth, now that so much deeper insight has been obtained into the general scheme of nature.

Impressed with these convictions, the Conductor of the Botanist considered that a publication of the description which he has here projected, and of which

the first volume is now completed, would not be unacceptable in the present condition of the public mind. It seemed to him that there was no work which precisely combined accurate scientific instruction, with an occasional appeal to the imagination, and to the moral and religious feelings. The manner in which he has attempted this has been chiefly by noticing such physiological phenomena as the plant under description seemed naturally to force upon the attention; for nothing is so likely to impress us with a deep sense of perfection in the contrivance, as the completeness and uniformity of the results obtained by its instrumentality. In the arts of life we give credit to the mechanic in proportion as he constructs a machine which performs its work with accuracy and precision; and so as we extend our knowledge of the various functions of vegetation, all of them the consequences of that mysterious vital action which is the common moving power to all machinery of organized beings, our wonder and admiration increases. As auxiliaries to his cause the Conductor has interspersed quotations from those poets and other authors, who have alluded to objects of Natural History in their writings. There are other Botanical periodicals of long established reputation, conducted by individuals of the highest scientific merit as Botanists, but their pages are devoted, almost exclusively, to systematic details, and seldom admit any reference to more general views and speculations. There are other works professing the same object, but of inferior reputation, and to which we are unwilling to refer in terms of dispraise. The position in which we have endeavoured to place the BOTANIST with respect to other periodicals of the same class, is one in which it is presumed that it cannot be considered to interfere with the peculiar claims of any. As regards the execution of the plates and the beauty of their colouring, we will venture to assert that the BOTANIST will stand advantageously in comparison with any work now before the public. We hope too that our scientific descriptions will not be found less accurate and valuable for the use of the proficient Botanist, than those in works of an exclusively scientific character, at the same time as such descriptions are made explicit, by translations, to the merely English reader. We have also endeavoured so to classify our miscellaneous information as to give to it uniformity of arrangement and facility of reference. Further, we claim for ourselves the peculiarity of attempting to assist the less scientific reader by the introduction of numerous wood cuts which accompany the letter-press, whereby some of the prominent features of both the natural and artificial systems are continually kept under the eye of the reader, and will be rendered familiar to him without application for that particular purpose. The GUIDE or

General Introduction to the Science of Botany, and the DICTIONARY, form separate Treatises apart from the body of the work, and we trust they will contribute in no inconsiderable degree to its general usefulness.

The Conductor most gratefully acknowledges the many obligations under which he has been already placed, by the condescension and liberality of several noble patrons, as well as by the assistance which he has received from some of the most distinguished public and private botanical establishments in Great Britain. It would have been more agreeable to him to have given expression to his feelings by enumerating the many instances in which he has been obliged, but to mention all would have been tedious, and to make any selection invidious. The pages of the BOTANIST have already borne testimony to some of the valuable assistance which has been supplied; and he would add, in conclusion, that he is deeply sensible how greatly these marks of favour have increased the claims on his best exertions.

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THE DICTIONARY,

A portion of which is given with each Number of the BOTANIST, as published monthly, forms a separate Volume.

THE GUIDE,

A part of which is likewise annexed to each Number, also forms a separate Volume.

Those portions of the above works originally annexed to the Numbers comprised in this Volume of the BOTANIST, will be delivered with it to the purchaser.

EXPLANATION OF THE WOOD-CUTS,

ILLUSTRATIVE OF THE

NATURAL AND ARTIFICIAL DIVISIONS.

FLOWERING Plants are grouped naturally into two great Classes, the Dicotyledones or Exogenæ, and the Monocotyledones or Endogenæ, (which terms are often anglicised into Dicotyledons or Exogens, and Monocotyledons or Endogens;) and after a little practice, almost every species may be very readily referred to its proper Class, without the necessity of recurring to any of those minute but most important characters by which it is primarily distinguished. Notwithstanding the great dissimilarity which subsists between such prominent organs as the stems, leaves, and flowers of plants in the same class, we may almost always detect some peculiarity or other in the structure of each of them, which alone is sufficient to indicate the class to which the plant belongs. There are certainly a few anomalous cases which will sometimes puzzle even the experienced botanist, but generally speaking it requires very little practice to enable any one to pronounce at a single glance, to which of these two classes every flowering plant belongs.

The first cuts, figures 1 and 2, by which we illustrate one of the important distinctions between these two great classes, refer to the internal organization of the stems, more especially in such as are woody. One class has been termed "Exogenæ," (ἔξω EXO, outside, γεννάω GENNAO, to beget) because the stems of the woody species are increased by an annual deposition of new wood on the outside of that which was previously formed. At first they consist only of a central column of pith, composed of cellular tissue, (which is made up entirely of little membranous bladders, forming innumerable cells) and surrounded by a cylinder of vascular tissue (which consists of delicate tubes or vessels) and this cylinder is termed the medullary sheath; and this again is invested by a thin membranous skin or epidermis. Fresh tissue, (composed of cells and vessels,) is gradually developed between the medullary sheath and epidermis, one part of which, in contact with the former, becomes a zone of wood, and the

Fig. 1.

Fig. 2.

remainder, lying immediately below the epidermis, forms a layer of bark. Every year a fresh development of tissue takes place between the layer of wood and the layer of bark formed the previous year, thus adding an additional layer to each of these parts, that to the wood being on its outside, whilst that to the bark is on its inside. The old layers of bark are necessarily thrust outwards, crack, and decay. Besides this arrangement of the woody parts of the stem into concentric zones, there are plates of cellular tissue placed vertically, and extending from the centre to the circumference, which in a transverse section appear like rays, and form what is termed by artizans the "silver-grain." The stems of Exogenæ therefore may be recognized by one or other of the following characteristics: 1, A distinct cellular pith, surrounded by its vascular medullary sheath; 2, Concentric layers of wood, formed of both cellular and vascular tissues; 3, Medullary rays of cellular tissue; 4, A distinct bark of cellular and vascular tissue.

Although all these characteristics are not necessarily combined in every Exogenous stem, they are all wanting in those of the second class, or "Endogenæ." The latter consist of a homogeneous mass of cellular tissue closely resembling the pith of an Exogenous stem, but then the vascular bundles are dispersed longitudinally throughout it, and not collected into a medullary sheath. These bundles of vessels run up the stem, and then curve towards the outside and enter the leaves. As the stem elongates fresh bundles are formed towards the outside, which intersecting the others rise into the leaves of the terminal bud; but the stems do not increase much in thickness, and no concentric layers are formed. There is no true bark, but the stems are invested by the rugged bases of the fallen leaves. The interior continues soft, whilst the exterior condenses and hardens by the continued addition of new bundles of vessels. It was formerly supposed that the new matter always originated towards the centre, and these stems were considered to grow in a manner somewhat the reverse of those of the Exogenæ, from whence they obtained the name of Endogenous (ἔνδον ENDON, inwards, γενναω GENNAO, to beget.) These stems then are recognised by the want of the several parts found in Exogenous species, and by the dispersion of the vascular bundles throughout their whole substance: figure 2. There are no trees of this class in temperate climates, but a good example of

their structure may be seen in a piece of cane, and even the herbage of Grasses, Asparagus, Ruscus, &c. is sufficiently developed to exhibit the same appearance.

Our next cuts, figures 3 and 4, exhibit certain peculiarities in the "venation" or "nervation" of the leaves. It has been remarked that the great majority of Exogenæ have the veins of their leaves distributed in a particular manner, whilst those of Endogenæ are differently arranged. The probable cause of this discrepancy is ascribed by De Candolle to the more frequent absence of a true limb in the leaves of Endogenæ than in those of Exogenæ. A complete leaf consists of two parts; 1st, The petiole or footstalk, commonly called the tail; and 2nd, the limb, or flat expanded portion. The veins in the petiole consist of bundles of vessels which run parallel to each other, and are more or less united into one mass; but when they reach the limb they diverge in various ways, subdividing as they proceed, and branching off at acute angles into smaller and smaller threads which give the limb a reticulated or net-like appearance, as figure 3. In certain cases the limb is not developed, and then the petiole is frequently flattened out and becomes limb-like, excepting that the nerves do not branch, but either continue parallel when the form of the petiole is linear, or are curved in the middle and converge towards the apex and base, when it is more or less oval. There are certain plants whose leaves are of two kinds, some of them being composed of a petiole and limb, and the rest consisting of a petiole only; and in these cases the difference in their venation is very distinctly marked. De Candolle therefore supposes that in other cases, where the venation of a leaf resembles that of these expanded petioles, we ought to consider them in the same light. There are some cases in which it would be difficult to allow such a conclusion, but in most others the inference is probably correct. But whether the reason assigned for these differences be the true one or not, we find the great mass of Exogenæ have their leaves reticulated with veins, as in figure 3, whilst those of the Endogenæ are seldom branched, but are disposed as in figure 4.

Fig. 3.

Fig. 4.

Besides these characteristics derived from the stems and leaves, (two of the nutritive organs) there are others of equal or even greater gen-

erality observable in the reproductive organs, the flower and fruit. The seeds of Exogenæ have a structure which may be illustrated by the Bean, Lupine, Radish, &c. Upon removing the outer coats of the seed we find the Embryo or young plant, composed of two fleshy lobes attached to a conical mass, which latter elongates and becomes the root. These lobes, figure 5, are termed cotyledons, and in some plants, as the Pea, they remain underground during the process of germination, whilst in others, as the Lupine and Radish, they rise above ground, and assume a green tinge, and more or less resemble true leaves. They are in fact the seminal leaves of the embryo, destined to afford it nourishment in the earliest stages of its development. These cotyledons are sometimes subdivided into two parts, so that we occasionally find three or four in plants which generally have only two, and this shews us the intimate connexion between these exogenous species and those of the fir tribe (Coniferæ) which have several cotyledons forming a whorl round the stem: figure 6. The term Dicotyledones (from δις TWICE, κοτυληδων KOTYLEDON, a seed-lobe) has been also given to the Class Exogenæ, because the great majority of its species have two cotyledons to their embryo; and though, as we have stated, there are a few cases where the cotyledons are more than two, yet in these they are always ranged round the stem in the same horizontal plane, and are not placed one above another.

Fig. 5.

Fig. 6.

A singular exception to the Dicotyledonous structure of an Exogenous plant occurs in the genus Cuscuta whose embryos have no cotyledons; but as the leaves of these plants are always abortive, and there are scarcely any traces of them left, it is reasonable to consider their cotyledons also to be abortive rather than to suppose them essentially wanting.

In the seeds of Endogenæ there is but one cotyledon, which in germination grows in the form of a fleshy cone, and then (figure 7) the leaves rise up in succession and expand one within the other at different heights along the stem, as in the Grasses, figure 8, Hence the name of Monocotyledones, (μονος MONOS, alone, κοτυληδον KOTYLEDON, a seed-lobe) has been given to this Class. The embryo is frequently very minute, and its parts not easily distinguishable before germination commences.

Fig. 7.

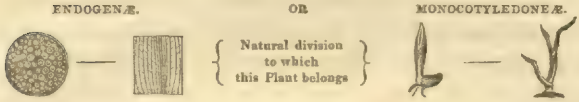
Fig. 8.

Dendrobium pulchellum.

DENDRO'BIUM PULCHEL'LUM.

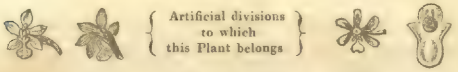
SHOWY DENDROBIUM.

ENDOGENÆ. OR MONOCOTYLEDONEÆ.



NATURAL ORDER, RUTACEÆ.

GYNANDROSÆ, OF LINDLEY.



GYNANDRIA, MONANDRIA, OF LINNEUS.

No. 5.

GENUS. DENDROBIUM. *SWARTZ.* SEPALA membranacea, erecta vel patentia, lateralibus majoribus obliquis cum basi productâ columnæ connatis. PETALA sepalo supremo sæpius majora, nunc minora, semper membranacea. LABELLUM cum pede columnæ articulatum vel connatum, semper sessile, indivisum vel trilobum, sæpius membranaceum, nunc appendiculatum. COLUMNA semiteres, basi longè producta. ANTHERA bilocularis. POLLINIA 4, per paria collateralia. *LINDLEY.*

SPECIES. DENDROBIUM PULCHELLUM. *ROXBURGH.* CAULIBUS teretibus pendulis. FOLIIS oblongo-lanceolatis, subplicatis, racemis lateralibus strictis multifloris, bracteis brevibus ovatis obtusis, SEPALIS ovatis acuminatis subcostatis. PETALIS oblongis obtusis tenuioribus et latioribus, labello unguiculato cochleariformi obtusissimo ciliato petalis breviore. *LINDLEY.*

GENERIC CHARACTER OF DENDROBIUM. SEPALS membranous, erect or spreading, the lateral ones largest, oblique, adhering to the elongated base, of the column. PETALS generally larger, but sometimes smaller than the upper sepal, always membranaceous. LIP articulated or united with the base of the column, always sessile, undivided or three-lobed, generally membranaceous, sometimes furnished with an appendix. COLUMN semi-cylindrical, greatly prolonged at the base. ANTHER two-celled. POLLEN masses four, placed side by side in pairs.

DESCRIPTION OF THE SPECIES, DENDROBIUM PULCHELLUM. STEMS about 1 foot or 1½ feet long, round, pendulous. LEAVES oblong-lanceolate, somewhat plaited, veins parallel; racemes lateral, straight, many flowered. BRACTS short, ovate, obtuse. SEPALS ovate acuminate somewhat ribbed, of a pale pink or whitish colour. PETALS oblong, obtuse, thinner and broader than the sepals. LABELLUM or lip furnished with a claw, formed like a shell, obtuse, shorter than the petals, with many ciliæ or hairs at the margin. The petals somewhat pink or rosy, the labellum purple at the margin with a deep orange-coloured centre.

REFERENCE TO THE DISSECTIONS.

1, Flower seen from behind. 2, ditto in front. 3, Upper part of the column. 4, pair of pollen masses.

Popular and Geographical Notice. Many orchideous plants are among the wonders of tropical vegetation, growing attached to the branches of trees, yet not as true parasites which derive their nourishment from the tree on which they grow, for they live entirely by absorbing moisture from the humid atmosphere by which they are there surrounded, and are properly termed Epiphytes. This species, however, occasionally grows on stones.

Introduction, where grown, Culture. It was introduced into this country about the year 1829, by the Horticultural Society of London, and is a native of the wide-spread woods of Sylhet, in the East Indies, flowering generally in May and June. The specimen from which our drawing was made, flowered in April, 1836, in the splendid stove for Orchideous plants of the Messrs. Loddiges, Hackney; where it grows attached to a frame-work of dead branches, suspended by wire, from the roof, in a very humid and warm atmosphere. In an instructive memoir on the cultivation of Epiphytes of the Orchis Tribe by Dr. Lindley, in the Transactions of the Horticultural Society, vol. I, of New Series, p. 42, after noticing the failures which attended the early attempts to establish these singular plants as inhabitants of our stoves, he proceeds to observe "By degrees, however, we discovered better means of management, and acquired more precise information upon the subject of their native places of growth, the substance of all which may be said to amount to this, that a well-drained soil, shade, a very high temperature, and an atmosphere nearly saturated with humidity are the conditions that are requisite to insure their successful cultivation, and that soil itself is of little importance to them; we have used common mould, lime rubbish, gravel, decayed vegetable matter, and moss, and all with equal success, provided the drainage was effectual and we have found all these equally useless when the drainage was not attended to; a circumstance which is no doubt due to the succulent nature of the plants, and to the very imperfect means that most of them possess of parting with superfluous moisture, in consequence of the compact nature of their cuticular tissue and of the minute size, or small number, of stomata or evaporating pores."

Derivation of the Names.

Dendrobium from Δενδρον a tree, and Βιος life, from living upon trees. Pulchellum, shewy; a diminutive from pulcher, pretty.

Synonymes.

Dendrobium pulchellum. Roxburgh, M. S.

Dendrobium pulchellum. Lindley's Genera and species of Orchideous Plants.

Gardoquia multiflora.

J.S. Hewston del.

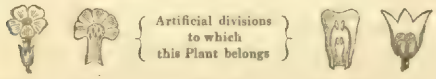
GARDO'QUIA MULTIFLO'RA.

MANY-FLOWERED GARDOQUIA.

EXOGENÆ. OR DYCOTYLEDONEÆ.

NATURAL ORDER, LABIATEÆ.

COROLLIFLORÆ, OF DECANDOLLE.



DIDYNAMIA, GYMNOSPERMIA, OF LINNEUS.

No. 6.

GENUS. Gardoquia. *Ruiz.* and *Pavon.* Calyx tubulosus, 13 (vel nunc 15) nervius subincurvus, ore æquali vel obliquo, dentibus brevibus rectis subæqualibus vel subbilabiatis. Corollæ tubus longe exsertus rectus vel incurvus, intus nudus (nunc fauce sub-piloso et immo tubi pilis sub-annulato); limbus bilabiatus, labium superius erectum subplanum emarginatum, inferius subpatens, lobis planis medio latiore (nunc æquali). Stamina 4 subdidynama, inferioribus longioribus, laxe adscendentia apice subdistantia, superiora subinde sterilia. Filimenta edentula. Antheræ biloculares, loculis distinctis parallelis vel subdivergentibus. Styli lobi subæquales. Achenia sicca lævia. *Bentham.*

SPECIES. Gardoquia multiflora. *Ruiz* and *Pavon.* Fruticosa, subglabra. Foliis petiolatis ovatis obtusiusculis subcrenatis basi rotundatis viridibus subtus pallidis, floralibus conformibus. Verticillastris laxis subsecundis, cymis pedunculatis vix dichotomis. Calycis glabriusculi dentibus acutis, fauce intus nuda. Corollis calyce triplo longioribus. *Bentham.*

Character of the Genus, Gardoquia. Calyx tubular, 13-nerved (in this instance often with 15 nerves,) slightly incurved, with the mouth either equal or oblique, and short teeth either equal or somewhat two-lipped. The tube of the Corolla exserted far beyond the Calyx, straight or incurved, naked within, (in this case slightly hairy within the throat, and again in the bottom of the tube) the limb 2-lipped, the upper one erect, nearly straight, emarginate; the inferior somewhat spreading, with straight lobes, the middle one the widest, (in this species the 3 lobes are equal.) Stamens 4, more or less didynamous, the inferior pair the longest, rather ascending and inclining outward, the superior pair sometimes sterile. Filaments toothless. Anthers 2-celled, the cells distinct, either parallel or more or less diverging. The lobes of the style nearly equal. Achenia dry, smooth.

Specific Character of Gardoquia multiflora. Shrubby, nearly smooth; with the leaves petiolate ovate somewhat obtuse and

---

Reference to the Dissections.

1. Corolla opened to shew the insertions of the stamens. 2, calyx 3, anther. 4, stigma. 5, germen seated on the glandular support, with the base of the style above. All magnified.

obscurely crenate with the base rounded, darker green above than beneath; the floral leaves like the rest; the veiticillasters lax and nearly secund, the stalked cymes scarcely dichotomous, the teeth of the smoothish calyx acute, its throat void of hair. The corolla more than three times the length of the calyx.

Description of the cultivated Plant. A deciduous Shrub, rather more than a foot high, with the herbage slightly harsh to the touch. At first glance its habit is very much that of a Fuschia. Branches at first tetragonous, very slightly tomentose, ultimately round and quite smooth, scarcely woody. Leaves with petioles the quarter of an inch and limb about an inch long, ovate to ovate-oblong, somewhat obtuse, obscurely crenate, with the margin roughish. The upper surface rather darker than the lower, where the veins are prominent and often, as well as the petiole, tinged purplish. The under surface covered with very minute punctures in each of which is seated a globular shining gland. The bruised leaves emit a fragrant odour somewhat resembling that from the Aloysia citrodora. Inflorescence in single cymes, from the axils of the upper leaves, with their peduncles a little longer than the petioles, dichotomously subdivided into three or five pedicels, on each of which is a minute linear-lanceolate bract. Flowers mostly secund. Calyx smooth, above a quarter of an inch long, tubular, very slightly incurved but a little more arched above than below. Mouth somewhat oblique, and 2-lipped, the upper lip with 3 and the lower with 2 small acute teeth which under a lens appear somewhat ciliate. The 5 carinal ribs most strongly marked, the 10 sutural ones also very distinct, those between the uppermost and 2 contiguous sepals occasionally confluent thus reducing the number to 13. Purplish with the veins green, dotted with minute glands similar to those on the leaves. Interior quite smooth and free from hair. Corolla more than an inch in length, delicate purplish-red, slightly tomentose externally, curved downwards before it expands, but becoming straight on flowering. The tube gradually dilating to the throat which is a little swollen. The limb bilabiate; the upper lip linear-oblong emarginate, somewhat ascending and reflexed at the edges; the lower lip subpatent with 3 equal oblong lobes, the middle lobe concave and a little inflexed, with the margin minutely erose, the lateral lobes spreading; a row of small scattered hairs extends from each side of the middle lobe in the lower lip to the bottom of the throat, and others clothe the bottom of the tube. Stamina, inserted at the base of the throat, the longest pair on the inferior side somewhat longer than the

corolla, the shortest pair from the upper side exserted beyond the mouth. At first they are all slightly ascending but ultimately become straight with a tendency to diverge. Filaments filiform, purplish, jointed to a thickened connective, upon the summit of which the two lobes of the anthers are adnate, distinct, and diverging from the apex at a very obtuse angle, so as to form nearly a straight line bluish-purple, longitudinally dehiscent, and containing white spherical pollen. Style filiform with a bifid summit, the lobes somewhat unequal, purplish, as long as the shorter stamens. Ovary with 4 distinct cylindric-ovate lobes seated on a thick glandular base, which secretes a drop of saccharine fluid.

J. S. Henslow.

Popular and Geographical Notice. Twenty two species of this Genus are described in Mr. Bentham's excellent Monograph of the Labiatæ, but not more than two of these have hitherto been recorded as under culture in this country viz. Gardoquia Hookeri, and G. Gilliesii, the former of which has been figured by Sir W. J. Hooker, in his Exotic Flora, vol. 3, p. 163, under the name of Cunila coccinea. In both these species the leaves are entire, but in the present case they are somewhat crenate. This species may be considered an interesting addition to our horticultural stores, both on account of the beauty of its flower and the fragrance of its herbage. This fragrance undoubtedly arises from an aromatic volatile oil, secreted by the minute glands which are so copiously scattered over the whole herbage. The order Labiatæ are eminently characterized by many delightfully fragrant species, of which Lavender, Thyme, and Rosemary, are familiar examples. The odour of some others is very powerful, but far from agreeable. The general properties of the order may be considered tonic, cordial, and stomachic; and in older times when every plant that grew was supposed to possess some peculiar virtue, many species of this order being really valuable were preeminently extolled for their medicinal qualities.

Introduction; where grown; Culture. The present plant was raised in the Cambridge Botanic Garden in 1835, from seeds from Valdivia, presented by the late Rev. G. R. Leathes, and which Mr. Biggs believes he received from Mr. Bridges. It seems to be of easy culture, and may be readily propagated by cuttings. It has hitherto been in a pot of rich loam with a little peat. It flowers in the beginning of autumn and probably if turned early into the open border its beauty would be greatly increased. The whole genus are natives of the W. Coast of S.

America, within the latitudes of Chili; for although Dr. Hooker has described Gardoquia Hookeri as having been brought by Mr. Ware from Florida to Philadelphia, it seems most likely that this is an error, as Prof. Don has already observed in Sweet's Flower Garden, v. 2, p. 271. They are all shrubs or undershrubs with handsome flowers.

Derivation of the Names.

Gardoquia. In honour of D. Diego Gardoqui, minister of Finance under Charles IV. King of Spain, a lover of Botany; and Multiflora, many-flowered, with respect to other species of the same Genus.

Synonymes.

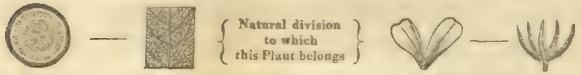
Gardoquia Multiflora, Bentham's Labiatæ p. 398, who quotes the two following Synonymes, G. Multiflora Ruiz & Pavon Fl. Per. & Chil. ined. 4, t. 495, f. a. Rizoa Ovalifolia. Cav. Ic. Rar. 6. 56. t. 578. (malè) Dr. Lindley has obligingly compared for us a specimen of the present plant with authentic specimens of the G. multiflora, and pronounces them to be indentical.

Cytisus laburno-purpureus.

CYTISUS LABURNO-PURPUREUS.

PURPLE LABURNUM.

EXOGENÆ. OR DICOTYLEDONEÆ.



NATURAL ORDER, LEGUMINOSÆ.

CALYCIFLORÆ, OF DECANDOLLE.

MONADELPHIA, DECANDRIA, OF LINNEUS.

No. 7.

GENUS. Cytisus. *Decandolle.* Calyx bilabiatus, labio superiore sæpius integro inferiore subtridentato. Vexillum ovatum amplum. Carina obtusissima genitalia includens. Stamina monodelpha. Legumen planocompressum polyspermum eglandulosum. *Decandolle.* Prodromus Systematis Naturalis Regni Vegetabilis Pars II, p. 153.

SPECIES. Cytisus Laburno-Purpureus. Caule ramoso, ramis teretibus incanescentibus. Foliis petiolatis, foliolis subtus pubescentibus. Racemis pendulis simplicibus, pedicellis calycibusque adpressè pubescentibus. Petalis dilute purpureis, seu lutescentibus. Leguminibus linearibus polyspermis adpressè pubescentibus.

Character of the Genus, Cytisus. Calyx two-lipped, the upper lip generally entire, the lower obscurely three-toothed. Standard ovate large. Keel very blunt, enclosing the stamina and pistillum. Stamens monadelphous. Pod flat-compressed, many-seeded, without glands.

Description of the Species, Cytisus Laburno-purpureus. This plant which is a hybrid between Cytisus Laburnum and Cytisus purpureus, partakes of the characters of both. It forms a large shrub or small tree, the branches at first ascending, afterwards forming graceful curves, the leaves alternate, with small subulate stipules, articulated, petiolated, petioles swollen at the base, forming the joint, each leaf consisting of three leaflets, shortly petiolated, articulated, the central leaflet larger than the lateral ones, elliptico-obovate, mucronate, upper surface shining, under pubescent, or nearly glabrous, racemes of flowers simple, or very rarely-branched, pendulous, about 8-10 inches long. Pedicels and Calyx either quite smooth or clothed with closely adpressed pubescence. Corolla papilionaceous. Petals 5, standard large emarginate, with two auricles towards the base. Keel very blunt. Seed-vessel clothed with fine pubescence.

Reference to the Dissections.

1, The standard. 2, the wings. 3, the keel formed of two petals cohering at the top. 4, stamens united by the filaments forming a tube round the pistil. 5, tube of the stamens laid open.

Popular and Geographical Notice. The genus Cytisus closely borders upon Genista. In Cytisus the calyx has the upper lip nearly entire, while in Genista it is divided; in Cytisus the standard is large and ovate, in Genista oblong or oval; in Cytisus the stamens and pistil are completely enclosed in the keel, in Genista imperfectly so. The leaves in all the species of Cytisus are ternate, in most Genistæ they are simple. It appears, that the flowers of this variety are liable to change, not only to those of Cytisus Laburnum but also to those of Cytisus purpureus. An instance of this is stated to have happened in the Jardin des Plantes, at Paris; see Gardener's Magazine, Vol. 12. Similar changes have occurred in other places; and it is further observed, (page 369) that "Some of the blossoms produced by this hybrid in the Horticultural Society's Garden were this year completely, and others partially, yellow." These facts are of great importance to the vegetable physiologist, as they tend to throw light upon the hitherto very obscure subject of specific identity. At present, neither Botanists or Zoologists are able to give a satisfactory account of what a species realy is, or to tell us within what limits it may vary; and nothing is so likely to lead us to a knowledge of those laws, by which the great Author of Nature has regulated and restricted the shapes of both animals and vegetables between certain typical forms, as experiments carefully made, and the results accurately recorded, of the circumstances which attend the production and cultivation of hybrid plants. The seeds of Cytisus Laburnum contain a vegetable principle, called Cytisin, which is poisonous: which it will probably be found to exist in the seeds of this plant.

Introduction; where grown; Culture. This hybrid originated near Paris, about the year 1824, and was introduced into England in 1830. Our drawing was made in May, from luxuriant specimens of the plant obligingly sent us by J. C. Kent, Esq. of Levant Lodge, Upton-on-Severn. These were produced from a bud of the hybrid variety, which had been worked on a stock of the common Laburnum only two years previously. It has the air of Laburnum, but is said to be more luxuriant in its growth, and to make straight shoots of 6 to 9 feet long in one season.

Derivation of the Names.

Cytisus is said to be derived from Cythnus, one of the islands of the Cyclades, where some of the species were first observed, and which are mentioned by Hippocrates, Theophrastus and Dioscorides. Laburnum is stated by Haller to be a latinized form of the alpine name L'Aubours.

Synonymes.

Cytisus Laburnum, flore purpureo. Hortulanorum.

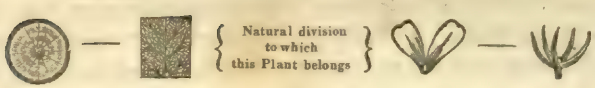
Tecoma australis

Mrs. Taylor del.

TEC'OMA AUSTRA'LIS.

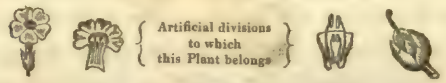
SOUTHERN TECOMA.

EXOGENÆ. OR DICOTYLEDONEÆ.



NATURAL ORDER, BIGNONIACEÆ.

COROLLIF ORÆ, OF DECANDOLLE.



DIDYNAMIA, ANGIOSPERMIA, OF LINNEUS.

No. 8.

GENUS. TECOMA. CALYX 5-dentatus. COROLLA subcampanulata, ore 5-lobo, inæquali. STAMINA 4, didynama: filamento quinto sterili, breviore. CAPSULÆ dissepimentum contrarium. FRUTICES, rarò ARBORES. FOLIA opposita impari-pinnata vel digitata. FLORES paniculati. *R. BROWN.* Prodromus Floræ Novæ Hollandiæ. Vol. 1, p. 471.

SPECIES. TECOMA AUSTRALIS. FOLIIS pinnatis glabris: foliolis 5 ellipticis, adultis integris. CAPSULIS oblongis. CAULE volubili. *R. BROWN.*

CHARACTER OF THE GENUS, TECOMA. CALYX 5-toothed. COROLLA subcampanulate, mouth 5-lobed, unequal. STAMENS 4, didynamous, the filament of the fifth sterile, shorter than the rest. The dissepiment of the capsule contrary to the valves.

DESCRIPTION OF THE SPECIES, TECOMA AUSTRALIS. ROOT fibrous. STEM about the thickness of the finger, climbing, cylindrical, knotty, branched; branches axillary, opposite, of a brown colour. LEAVES proceeding from the nodi of the stem and the branches opposite, petiolated, unequally pinnated, smooth, shining, of a deep green above, paler below. LEAFLETS two or four on each side of the rachis, their petioles swollen and articulated at their base. FLOWERS in axillary and terminal compound racemes drooping. PEDUNCLES opposite, articulated, bracteated, generally divided and many-flowered. BRACTS three or four, arranged circularly around the base of the peduncles and pedicels, straight lanceolate, acute, very short, falling very quickly. CALYX very short, campanulate, smooth, 5-lobed, the lobes oval, obtuse, with an obscure point. COROLLA monopetalous, hypogynous, tubular, irregular. TUBE swollen, slightly curved, smooth without, hairy within, four times as long as the calyx. LIMB open, two-lipped, upper lip two-lobed, inferior, longer, three-lobed, lobes curved at the margin. STAMENS included in the tube; four fertile, the fifth abortive, very short. OVARY oval, smooth, green. FRUIT a capsule, elliptico-oblong.

REFERENCE TO THE DISSECTION.

Flower laid open to shew the 4 didynamous stamens, and abortive fifth filament.

Popular and Geographical Notice. The species of this Genus, although few, are widely distributed. Some are natives of various parts of North and South America, and the West Indies; others of China and the Cape of Good Hope, whilst our present plant is a native of New South Wales. It should be remembered that the highly ornamental Bignonia radicans of Linneus (which is figured under No. 123, of the Botanic Garden) is now considered as belonging to Tecoma. In the above description the nature of the fifth stamen is pointed out, as being abortive, i. e. destitute of the anther, the most essential part, or that which prepares the pollen or fertilizing principle. In this state therefore it is useless, as far as any direct share which it could have in the function of reproduction, but it is far from useless in shewing us that in the works of nature, there are no abrupt or sudden transitions; for as 5 is the normal number of the parts of the flower in many and perhaps all exogenous plants, so before we pass to such cases as Labiate plants, (of which the Gardoquia multiflora in the present number may be taken as an example) in which generally, four perfect stamens only are found: we perceive in the Bignoniaceæ, and some Scrophulariaceæ, this abortive stamen more perfectly, but yet insufficiently developed, by which the transition from 5 to 4 is rendered more gradual.

Introduction; where grown; Culture. This species was introduced from New South Wales, in 1792. The plant from which this representation was taken flowered in May, 1836, in the beautiful Conservatory of W. Leaf, Esq. of Park-Hill, Streatham Common. In habit it is a climbing shrub, producing numerous groups of very handsome flowers. It thrives best in a light sandy soil, but will succeed in any. Young cuttings root readily, when taken off at a joint, and planted under a bell-glass, in a pot of sand, plunged in a gentle heat.

Derivation of the Names.

Tecoma, from the Mexican name of the genus Tecomaxochitl. Australis, from Auster, the South-wind; as it comes from the Southern hemisphere.

synonymes.

Bignonia Pandorana, Andrews's Botanical Repository, 86.
Bignonia Pandorea, Ventenat Plantes de Malmaison, 43.
Bignonia Pandoræ, Botanical Magazine, 865.

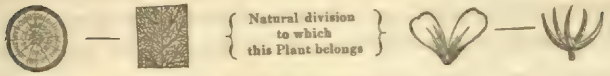
Anemone vitifolia

Mitt Mound del.

ANEMO'NE VITIFO'LIA.

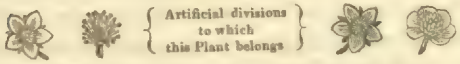
VINE-LEAVED ANEMONE.

EXOGENÆ, OR DICOTYLEDONEÆ.



NATURAL ORDER, RANUNCULACEÆ.

THALAMIFLORÆ, OF DECANDOLLE.



POLYANDRIA, POLYGYNIA, OF LINNEUS.

No. 9.

GENUS. ANEMONE. *CASPAR BAUHIN.* Involucrum 3-folium à flore distans, foliolis incisis. Calyx petaloideus, 5-15-sepalus. Petala nulla. *DECANDOLLE.*

SPECIES. ANEMONE VITIFOLIA. *BUCHANAN.* Foliis rotundato-cordatis, 5-7-lobis, subtus cauleque adpressé lanuginosis, radicalibus longé petiolatis; involucellis subsessilibus trifidis; sepalis ovalibus extus sericeis; pistillis superne glabris; caryopsidibus pedicellatis, muticis, densissimè lanuginosis. *WALLICH.*

CHARACTER OF THE GENUS, ANEMONE. Involucre three-leaved distant from the flower, its leaflets cut or incised. CALYX petaloid, the sepals varying in number from 5 to 15. PETALS absent.

DESCRIPTION OF THE SPECIES, ANEMONE VITIFOLIA. PLANT erect, from two to three feet high, suffruticose below, herbaceous above, sparingly branched; while young, clothed with a white closely adpressed pubescence, less so as it grows older. ROOT perpendicular, subfusiform. STEM round, twice or thrice almost dichotomously divided, branched. BRANCHES erect, elongated. RADICAL LEAVES numerous, erect, petioles long, lamina about the size of the palm of the hand, orbiculari-cordate, 5-7 lobed, lobes unequal, acute or obtuse, incised or toothed, rounded at the base, connivent, upper surface shining, nearly smooth, very deep green, under surface covered with a snowy down. NERVES numerous, prominent, and reticulated. STEM-LEAVES somewhat whorled, and involucre-like, spreading, shortly petiolate or subsessile, unequal, about 5 inches long, 3-5 lobed, LOBES ovate, subacuminate. PETIOLES channeled, dilated at the base, amplexicaul. PEDUNCLES terminal, erect, cylindrical, villous, generally three, sometimes more, of which some are trifid at the middle, furnished with an involucellum, three-flowered, the others one-flowered, 3-5 inches long, those which bear the perfect seeds being the longest. The involucellum of leaflets about an inch long, which are subsessile, three-cleft and serrated. FLOWERS large, opening wide, nearly two inches across, white or faintly tinged with yellow, external surface clothed with a silky down of a light violet hue. SEPALS six or eight, oval, obtuse, nearly

REFERENCE TO THE DISSECTIONS.

1, A longitudinal section of the receptacle. 2, An anther, magnified.

an inch in length, spreading, somewhat unequal, the bases of the inner ones somewhat contracted or narrowed. STAMENS numerous, smooth, very short, somewhat spreading and ascending. PISTILS very numerous, acute, smooth above, villous. CARYOPSES small compressed, with a delicate stalk, not pointed or awned at the apex, but covered with long snowy wool, and the whole forming a white globular head.

POPULAR AND GEOGRAPHICAL NOTICE. This genus of plants, as its Greek name implies, was known to the ancients, but the only species with which they were acquainted, was the Anemone coronaria of modern botanists. It was in reference to that species that in the indulgence of their fancy, and carried away by a graceful, but erroneous, mythology, they invented the fable of the Anemone originating in the grief of Venus for the loss of Adonis, (*Αἷμα ῥόδον τικτει, τὰ δὲ δάκρυα ταν ἀνεμώναν*; his blood produces the rose, her tears the Anemone). The number of species known at present may be reckoned 65 or 70, exclusive of the Hepaticas, most of which inhabit the woods, thickets, and mountains of the temperate regions, more especially of the northern hemisphere. Anemone vitifolia was discovered by Dr. Hamilton Buchanan, at Suemba in Upper Nepaul, where, according to Dr. Wallich "It grows in all the forests of the great valley and the surrounding mountains, delighting in the most shady, retired, and moist situations, in the vicinity of rills and torrents." It has been since found at Kamoun? in similar places, and also near Gossam-Than, in the Himalaya.

INTRODUCTION; WHERE GROWN; CULTURE. This showy species of Anemone was introduced to England, in 1829, by seeds brought from India, by the Rt. Hon. the Countess Amherst, and cultivated in her Ladyship's choice collection at Montreal, Kent. For the specimen from which our drawing was taken we are indebted to the kindness of Lady Harriet Clive. Her Ladyship's Gardener at Hewell, Mr. Markham, informs us that the seeds were sown in October, the young plants kept in the greenhouse till May, then put out into beds, where they flowered luxuriantly from August to November inclusive. Spring-sown plants will not blossom till the following year. Increase may be obtained by cutting the crowns of the roots into pieces.

DERIVATION OF THE NAMES.

Anemone, wind-flower, from *ἄνεμος*, ANEMOS, the wind, as many of the species flower during the boisterous weather of early spring, or grow near mountain tops, in windy exposed situations. It is necessary to remark that when used as a Latin word, the quantity of the penultimate or last syllable but one of anemone is long, while as an English word custom authorizes the same syllable being made short. Vitifolia, from vitis, a vine, and folium, a leaf.

SYNONYMES.

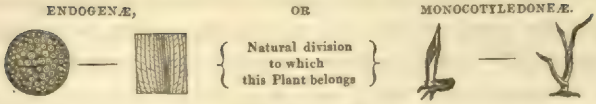
ANEMONE VITIFOLIA. Buchanan, in the herbarium of Mr. Lambert. Decandolle, Systema Naturale Regni vegetabilis, Vol. 1, p. 211. Decandolle, Prodromus Systematis Naturalis Regni Vegetabilis, Part 1, p. 21. Don's General Dictionary of Gardening and Botany Vol. 1. p. 20. Wallich, in Botanical Register, 1835. Don, Prodromus Floræ Nepalensis, p. 193. Botanical Magazine, 3376.

Cycnoches papilio.

ONCIDIUM PAPILIO.

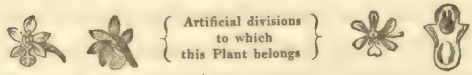
BUTTERFLY ONCIDIUM.

ENDOGENÆ, OR MONOCOTYLEDONÆ.



NATURAL ORDER, ORCHIDACEÆ.

GYNANDROSÆ, OF LINDLEY.



GYNANDRIA, MONANDRIA, OF LINNEUS.

No. 10.

GENUS. ONCIDIUM. *SWARTZ.* PERIANTHIUM explanatum. SEPALA sæpius undulata: lateralibus nunc sub labello connatis. PETALA conformia. LABELLUM maximum, ecalcaratum, cum columna continuum, variè lobatum, basi tuberculatum vel cristatum. COLUMNA libera, semiteres, apice utrinque alata. ANTHERA semibilocularis, rostello nunc abbreviato, nunc elongato rostrato. POLLINIA duo, posticè sulcata, caudiculâ planâ, glandulâ oblongâ. *LINDLEY.*

SPECIES. ONCIDIUM PAPILIO. (*LINDLEY.*) Pseudobulbis subrotundis compressis rugosis monophyllis, foliis oblongis coriaceis obtusis maculatis, scapo perennante debili ancipiti articulato apice paucifloro, sepalo supremo petalisque linearibus longissimis basi angustatis, sepalis lateralibus oblongis revolutis undulatis labello longioribus, labelli laciniâ intermediâ emarginatâ subrotundâ crispâ basi valde angustatâ lateralibus rotundatis, cristæ glandulis formam ranæ cubantis referentibus, columnæ alis serratis. *LINDLEY.*

CHARACTER OF THE GENUS, ONCIDIUM. PERIANTH spread out. SEPALS often wavy: the lateral ones sometimes connate under the lip. PETALS uniform. LIP very large, without a spur, continuous with the column, variously lobed, tuberculated or crested at the base. COLUMN free, semi-cylindrical, apex winged on both sides. ANTHER nearly two-celled, the rostellum sometimes very short, at other times greatly elongated. POLLEN masses two, furrowed behind, the caudicula flat, the gland oblong.

DESCRIPTION OF THE SPECIES, ONCIDIUM PAPILIO. The spurious bulb (pseudo-bulb), of which there are two or three in each plant, is roundish, compressed, rough, deep purple, giving origin to a single elliptic-oblong leaf, both surfaces of which are spotted or reticulated with dark purple irregular lines. SCAPE OR FLOWER-STEM, springing from the base of the bulb, two-three feet long, wavy, jointed, with sheathing membranous pink bracteæ at the joints, slender, roundish below, two-edged towards the top, spotted; few—one, rarely two—

REFERENCE TO THE PLATE.

The miniature sketch, on the right hand side of the plate, distinctly shows the peculiar habit of this plant, in the elevation of a single flower on a tall and slender stem.

flowered. Flowers large, shewy, remarkably singular, nodding. The upper sepal of the calyx and the petals linear, very long, contracted at the base, with distant green spots; lateral sepals oblong tapering, blunt at the apex, revolute and wavy at the margin, longer than the lip, which they nearly enclose, striped with transverse yellowish green stripes or spots; the lip consisting of three segments, the central one of which is large, round, emarginate, spread out, crisp, crenated or curved at the margin, outer portion of a cinnamon colour, central part greenish yellow, very uneven, contracted at the base, the two lateral segments roundish, spotted; the glands of the crest resembling a frog sitting; the wings of the column serrated. Pollen masses two-lobed. Ovary small, linear-club-shaped, striated.

Popular and Geographical Notice. This most singular plant grows in the island of Trinidad, clasping its white roots around the branches of trees, from which, however, it does not directly derive any nourishment, being an epiphyte, not a parasite. The greater number of the members of this tribe grow in those parts of the world, where heat and great humidity co-exist, as they live chiefly by absorbtion from the atmosphere. Humboldt says "that the lifetime of an artist would not be sufficient to represent the splendid orchideous plants which are produced in the deep awe-inspiring mountain-vallies of the Peruvian chain of the Andes." An equal luxuriance of this kind of vegetation prevails in the moist forests of both Indies; while it is almost entirely absent from the South-sea islands. For some interesting notices of the habits of Epiphytal Orchidaceæ, see Loudon's Gardeners' Magazine for January, 1835, p. 1. and also March, 1835, p. 137.

Introduction; where grown; Culture. This species was introduced into the stoves of Great-Britain, from Trinidad, by the late Baron De Schack, in 1823. The specimen from which our drawing was made, flowered in June last, in the choice collection of Orchidaceous novelties of John Willmore, Esq. of Oldford, Staffordshire, where its slender stem attained the height of two feet and a half, supporting its solitary flower, which like a splendid insect seemed ready to take wing and leave behind its more earth-bound kindred.

Derivation of the Names.

Oncidium, from "Ογκιδιον *Ogkidion*, a tubercle, from two prominences on the lip of the species first described by *Swartz*, in Acta. Holm. 239, 1800. Papilio, a butterfly, from its resemblance to that insect.

Synonymes.

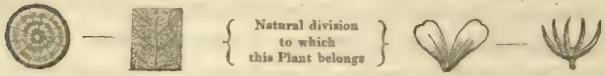
Oncidium Papilio. Lindley, in Botanical Register, 910. Hooker, in Botanical Magazine, 2795. Loddige, Botanical Cabinet, 1086. Lindley, Genera and Species of Orchideous Plants, p. 203.

Echeveria racemosa

ECHEVE'RIA RACEMO'SA.

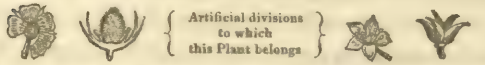
RACEMOSE-FLOWERED ECHEVERIA.

EXOGENÆ, OR DYCOTYLEDONEÆ.



NATURAL ORDER, CRASSULACEÆ.

CALYCIFLORÆ, OF DECANDOLLE.



DECANDRIA, PENTAGYNIA, OF LINNEUS.

No. 11.

GENUS. ECHEVERIA. CALYX 5-partitus, sepalis folia referentibus erectis, imâ basi sub-concretis. PETALA 5, infernè coalita, erecta, crassa, rigidula, ad nervum medium crassiora et ferè basi trigona, acuta. STAMINA 10, petalis breviora, basi cum petalis concreta. SQUAMÆ 5, breves, obtusæ. CARPELLA 5, in stylos subulatos abeuntia. *DECANDOLLE.*

SPECIES. ECHEVERIA RACEMOSA. *Otto.* FOLIIS radicalibus rosulato-confertis, elliptico-lanceolatis, carnosis, pruinoso-glaucescentibus, persistentibus, caulinis alternis, ovato-acutis deciduis. FLORIBUS secus rachin pedicillatis, calyce carnoso, 5-partito, glauco; corolla coccinea basi turgida, petalis ad medium coalitis, apice acutis.

CHARACTER OF THE GENUS, ECHEVERIA. CALYX five-parted. SEPALS resembling the leaves, erect, somewhat concrete at the base. PETALS 5, united at the lower part, erect, thick, rigid, thickening towards the central nerve and almost triangular at the base, acute. STAMENS 10, shorter than the petals, to which they adhere at the base. SCALES 5, short, obtuse. CARPELS 5, terminating in awl-shaped styles.

DESCRIPTION OF THE SPECIES, ECHEVERIA RACEMOSA. PLANT herbaceous, fleshy. ROOT above the ground, prolonged into a sort of tuberous neck, which is dark brown and wrinkled. RADICAL LEAVES crowded, roseate, elliptic-lanceolate, succulent, glaucous, or almost pulverulent, persistent. FLOWER stems about 2 feet high, with small, distant alternate, ovate-acuminate deciduous leaves. RACEME of numerous crimson flowers, the calyx glaucous like the leaves. COROLLA fleshy, the petals acute and spreading towards the apex. STAMENS 10, in two rows, those of the outer one shorter and adherent to the petals; those of the inner longer and free. OVARY 5-celled, many-seeded, seeds small.

POPULAR AND GEOGRAPHICAL NOTICE. The tribe of plants of which the one now figured is a member, grows on the rocks and arid sands of most countries, but more particularly of the Cape of Good Hope: all

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REFERENCE TO THE DISSECTIONS.

1, A section of a leaf. 2, section of the germen. 3, The corolla cut off, leaving the stamens round the germen. 4, The corolla wholly removed, showing the attachment of the stamens.

the species, however, of the Genus Echeveria with which we are acquainted are natives of Mexico. This species grows on Monte Serata, and is called Talapulacajhata, by the aboriginal inhabitants; among whom it serves, like the Myosotis palustris, or Forget-me-not among the European nations, as an emblem of remembrance. The wish to be remembered by those we love, is as strong in the breast of an Indian savage, as in the most refined member of civilized society, and at parting, the one presents as fondly as the other, some token by which he desires to be recalled to the recollection of his friends. Flowers are often used for this purpose, and no gift can be more pure or appropriate, the value arising not from any intrinsic worth in the present, but from the intention of the giver. A flower, under these circumstances, is invested with new charms; for it is then

> ———Affection's tribute, friendship's offering,
> Whose silent eloquence, more rich than words,
> Tells of the giver's faith and truth in absence,
> And says, "Forget-me-Not."

The epidermis of succulents possess very few of the minute pores or organs termed stomata, through which moisture is constantly exhaling in other plants when they are exposed to the influence of light. Hence most of the plants of the present Order are pre-eminently fitted to live in the arid spots where they usually grow; thus affording one among the many examples which Botany offers to our notice of that wisdom with which natural objects are distributed over the surface of the earth, each in a position best adapted to its peculiar nature. May we not rather say that each has been so constructed in order that it might become fitted to occupy a specific station, and add one more illustration to the truth "And God saw every thing that he had made, and behold it was very good." Gen. 1, 31.

There are few natural Orders where the species are so liable to vary in the number of the parts of which the floral whorls are composed as in the Crassulaceæ; and hence we find them dispersed through not less than six Classes of the Linnean Artificial System.

Introduction; where grown; Culture. The plant from which our drawing was taken, flowered in the Liverpool Botanic Garden in October, 1836. It should be potted in light sandy soil, and kept in the stove, or a sunny part of the Green-house.

Derivation of the Names.

Echeveria, in honour of M. Echever, a Botanical Painter, who executed many of the finest designs for the Mexican Flora, begun by M. M. Sessé, Mocino, and Cervantez. Racemosa, racemose, from Racemus, a raceme, the flowers being arranged in that form of inflorescence.

Cactus speciosus
Var. lateritius

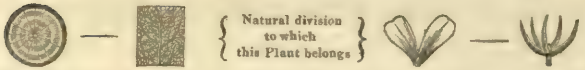
J. S. Henslow del.

CACTUS SPECIO'SUS;

VARIETY? LATERITIUS.

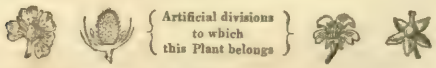
SHOWY BRICK-RED CACTUS.

EXOGENÆ, OR DICOTYLEDONEÆ.



NATURAL ORDER, CACTACEÆ.

CALYCIFLORÆ, OF DECANDOLLE.



ICOSANDRIA, MONOGYNIA, OF LINNEUS.

No. 12.

GENUS. Cactus. Sub-genus, Cereus. Sepala numerosissima imbricata basi ovario adnata, in tubum elongatum concreta, exteriora breviora calycinalia, media longiora colorata, intima petaliformia. Stamina numerosissima cum tubo concreta. Stylus filiformis apice multifidus. Bacca sepalorum reliquiis areolata tuberculosa aut squamata. Cotyledones nullæ? (nunc distinctæ incumbentes). Frutices carnosi elongati axi ligneo internè medullifero donati, angulis verticalibus spinarum faciculos gerentibus regulariter sulcati. Anguli seu alæ nunc plurimæ, nunc paucissimæ, rarius duæ tantum et tunc rami compresso-alati. Flores ampli è spinarum fasciculis aut crenis angulorum orti. *De Candolle.* Prod. 3, 463.

SPECIES. Cactus Speciosus, var. lateritius. Floris tubo limbo petalorum breviore, ramis dipteris trigonisque.

Character of the Sub-genus, Cereus. Sepals very numerous imbricate, cohering by their base with the ovary, and forming a long tube, the outermost shorter and resembling calycinal segments, the intermediate longer and coloured, the innermost petaloid. Stamens very numerous concrete with the tube of the flower. Style filiform many-cleft at the apex. Berry invested with the remains of the sepals in the form of blotches, tubercles, or scales. No cotyledons? (in the present case they are distinct and incumbent). Shrubs with long fleshy branches, having an internal woody axis containing pith, and regularly furrowed in vertical ridges bearing bundles of spines. Ridges or wings either very numerous or very few, less frequently only two, and then the branches become compressed and winged. Flowers large, springing from the bundles of spines or crenations of the ridges.

Character of the Variety. The tube of the flower shorter than the limb of the petals, the branches both winged and trigonal.

Description of the present Plant. Several stems or branches

Reference to the Dissections.

1, Seed entire. 2, Ditto with the testa removed, and invested by the membranous tegmen. 3, the embryo. 4, Anther; in decaying it is divisible into two membranes, as represented by fig. 5.

rise from the ground, which are at first round, but soon dilate into fleshy flat laminæ, or become triangularly expanded. The margins are broadly crenate, with a tuft of short hair, and occasionally a few spines in the sinuses. The branches are contracted at intervals, and fresh branches appear jointed upon them, round below, gradually becoming multangular, but soon ending in trigonal or flattened expansions like the rest. FLOWERS not very numerous, from the sinuses of the flattened and trigonal branches, 4 to 5 inches long, of a bright crimson and lasting, after expansion, for 4 or 5 days. Segments of the perianth not strictly separable into calyx and corolla; the outermost retaining the character of bracts, and the rest gradually becoming more and more petaloid as they proceed inwards. They cohere below into a fleshy tube which completely invests the ovary and extends for some distance beyond it. The segments of the limb are more or less lanceolate, slightly patent. STAMENS very numerous, nearly as long as the perianth. The filaments adhere to the tube; but the greater part of them become free at about one third the distance from the mouth and hang out in a separate bundle from the rest, which cohere through the whole length of the tube and form a distinct whorl at its summit. They are whitish, with yellow anthers and white pollen. OVARY unilocular, with numerous ovules on long twisted funicular chords, attached to the paries. STYLE one, filiform, branched at the apex into 7-9 stigmata, a little longer than the stamens. FRUIT a pulpy berry with fragrant smell and taste, ripe at the time when the new flowers expand. SEEDS with a hard, dark, shining punctate testa and a thin membranous tegmen: no albumen, a fleshy embryo with thick radicle and incumbent cotyledons. *J.S. HENSLOW.*

N. B. In the Natural Order of Cacteæ, as defined by De Candolle, the genus Rhipsalis constitutes a distinct tribe (Rhipsalideæ), whilst all the other genera may be considered as sub-genera of the old genus Cactus, and form the tribe Opuntiaceæ. Our plant belongs to the group, whether genus or sub-genus, termed Cereus. This group has been further subdivided artificially into minor groups, one of which constitutes Mr. Haworth's genus Epiphyllum, where the stem is flat and foliaceous. De Candolle, however, remarks in his treatise on the Order, in the Mem. du Musée. Vol. 17. p. 55, that this group cannot be formed into a distinct genus from such a consideration alone, and the present plant most completely confirms his opinion, as we find some of its stems are trigonal, whilst others are flat. It is not strictly

correct, as De Candolle supposes, to say that this group never produces true leaves, since they are sometimes very distinctly formed on young shoots of Cactus speciosus, though they soon fall off.

Popular and Geographical Notice. This plant is evidently most closely allied to Cactus speciosissimus, var. lateritius, figured in No. 1596 of the Botanical Register; but no details are given with that figure, and it is merely referred to as a hybrid. Whether the present plant be a hybrid, or merely an extraordinary variety of Cactus speciosus, is involved in some degree of uncertainty. It was raised in the Botanic Garden at Cambridge, with 23 others, from seeds of Cactus speciosus, sown in the year 1828. The person who raised these plants (Wm. Scott) feels convinced that there was no specimen of Cactus speciosissimus in the garden at that time, by which the hybridity could have been produced; but in the absence of any precise record it must remain very doubtful whether his statement can be trusted. How many interesting facts are daily lost to science by the want of sufficiently accurate details respecting the numerous varieties and hybrids which the practical gardener is continually producing; and how desirable it would be for such persons always to record the exact circumstances under which their experiments are conducted. We might then hope to secure sufficient data for unravelling much of that mystery which at present hangs over our subject, especially as regards the identification of species; and so obtain some sound knowledge of the laws upon which the variation of different individuals from a particular type depends. The close resemblance which Cactus speciosissimus lateritius bears to Cactus Jenkensonii is noticed in the Botanical Register, and the flowers of the present plant also appear to differ from it chiefly in their deeper colour, (not paler as in that variety). It excels the Jenkensonii in having the segments of the perianth more connivent, and the whole flower stands out horizontally, and does not droop as in that species. In Jenkensonii the anthers and stigmas are purplish, but we possess a seedling from this species where several of these trifling distinctions are less marked, and where none but the eye of the horticultural amateur would be inclined to recognize much difference between it and the present plant, always excepting the herbage, since the stems of Jenkensonii are all flat and less fleshy.

The irritability exhibited by the leaves of the Sensitive plant is a phenomenon with which most persons are familiar; and many of our readers have probably also witnessed the effect produced by touching

the stamens of the common Berberry. In these and some other cases on record, certain parts of the flower or leaves move, as it were spontaneously, upon being stimulated in various ways, especially upon being slightly touched or shaken. It has been noticed by De Candolle that the stamens of the tribe Opuntiaceæ also show some degree of irritability; and C. Darwin Esq. informs us that he met with a small species of Cactus, common on the arid plains about Port Desire and Port St. Julian in Patagonia, whose flowers possessed this property in a remarkable degree; and it will be well worthy the attention of all cultivators of this interesting Tribe, to see whether they cannot detect a similar property in other species. Upon thrusting a straw or his little finger into the tube of the flower, he found the stamens immediately collapsed round it, and that in a short time the segments of the perianth also slowly closed together.

Derivation of the Names.

Cactus, borrowed from κακτος kaktos, some spiny plant or other, described by Theophrastus, as growing especially in Sicily, and used for food.

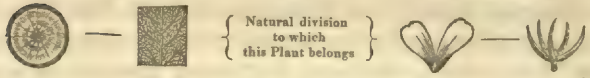
Speciosus, showy. Lateritius, made of brick or tile, in allusion to the brick-red colour.

Clerodendrum squamatum

CLERODEN'DRON SQUAMA'TUM.

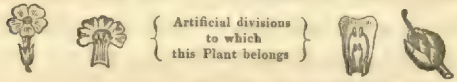
SCALY CLERODENDRON.

EXOGENÆ, OR DICOTYLEDONEÆ.



NATURAL ORDER, VERBENACEÆ.

COROLLIFLORÆ, OF DECANDOLLE.



DIDYNAMIA, ANGIOSPERMIA, OF LINNEUS.

No. 13.

GENUS. CLERODENDRON. CALYX 5-fidus (nunc 5-dentatus.) COROLLÆ tubo cylindrico; limbo quinque-partito, patente, laciniis sub-æqualibus. STAMINA juxta faucem inserta, adscendentia: antherarum loculis parallelis. BACCA pyrenis 4, monospermis. *ROBERT BROWN.*

SPECIES. CLERODENDRON SQUAMATUM. *VAHL.* FOLIIS cordatis subintegerrimis supra villosis subtus squamosis, paniculæ ramossimæ ramis glabris coloratis, tubo corollæ calycem duplo superante, genitalibus longissimis. *SPRENGEL.*

CHARACTER OF THE GENUS, CLERODENDRON. CALYX 5-cleft (sometimes merely 5-toothed.) Tube of the corolla cylindrical, limb 5-parted, spreading, segments somewhat unequal. STAMENS inserted near the throat, protruding, ascending; cells of the anthers parallel. BERRY of 4 pyrena or hard nuts, each containing one-seed.

DESCRIPTION OF THE SPECIES, CLERODENDRON SQUAMATUM. A SHRUB, with smooth, four-angled, furrowed branches. LEAVES petiolate, two inches or more in length, cordate, with a deep sinus at the base, not much pointed, three or five-nerved: delicate, smooth, obscurely angled towards the base, but scarcely toothed, occasionally having very minute hairs at the margin, the under surface covered with very minute orbicular scales. FLOWERS in a panicle, which is terminal, spreading, and smooth. PEDUNCLES thrice dichotomously divided, pedicels scarcely branched the pedicel in each dichotome one-flowered. SEGMENTS of the calyx ovate, acute, coloured, smooth. TUBE of the corolla twice the length of the calyx. STAMENS 4, didynamous, filaments long slender; anthers somewhat versatile, two-cleft below the point of attachment to the filament. STYLE simple, slightly bifurcate at the apex. FRUIT capsular, two-celled, 4-seeded.

POPULAR AND GEOGRAPHICAL NOTICE. This remarkably splendid plant is a native of China and Japan, where it seems to have been first noticed by Kæmpfer, on which account it is called Kæmpfer's Scar-

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REFERENCE TO THE DISSECTIONS.

1, Ovarium transversely cut. 2, corolla laid open. 3 and 4, back and front of Stamens.

let Clerodendron; a name which is correctly bestowed, provided the present plant and that figured in the Botanical Register, t. 649, be identical with the plant described by Jacquin, under the name Volkameria Kæmpferi, in his Icones Plantarum rariorum. Vol. III, t. 500: All the most eminent authorities consider them identical, and especially Dr. Robert Brown admits the Volkameria Kæmpferi as a synonyme of Clerodendron squamatum, in the 2nd Edit. of the Hortus Kewensis, Vol. 4, p. 63; and from a careful inspection of the plate of Jacquin with that in the Botanical Register we are satisfied of their identity with our present plant.

We feel regret whenever it is necessary to fill our pages with discussions about species and their synonymes, but it is a duty we owe the science we have attempted to promote by the publication of The Botanist, and we must discharge that duty when required. Although this plant has been known in Britain for nearly fifty years, it has been recently passed off as a new species and designated Clerodendron Speciosissimum. This may have resulted from ignorance of its being already in the country, and of its having been described under the name of Clerodendron Squamatum, a name which cannot be disturbed.

Introduction; where grown; Culture. This plant was introduced into Britain in 1790, by Sir Joseph Banks, but has obtained additional attention lately on account of young plants of it having been received from the continent into two or three English nurseries, where it was not known. The individual plant from which our drawing was taken, was obligingly sent to us from the collection of J. Jarrett, Esq. of Camerton House, near Bath. Mr. Robert Abbot, the gardener, at Camerton House, not only displays good feeling in the zeal of his profession, but he gives real information, to which we are happy in being able to give circulation. He says, "I hope that the Clerodendron will soon be in every stove in the country; indeed it will be the proprietor's fault if it be not, for assuredly it will soon be a very cheap plant, as it strikes so freely from cuttings; indeed, a single leaf, with a bud at the base, put into a pot of sand, under a bell-glass, will in a few days make a plant, in the same manner as Gloxinias, Gesnerias, &c."

Derivation of the Names.

Clerodendron, from κληρος, cleros, accident, the properties being so variable that one species is useful, while others are hurtful, so that the result seems like chance or lot, δενδρον dendron, a tree; Squamatum, scaly, from squama a scale, certain scales, being found on the under surface of the leaves.

Synonymes.

Clerodendron squamatum, Vahl symbolæ Botanicæ, Pars Secunda, p. 74· Willdenow, Species Plantarum, Vol. III, p. 387. Botanical Register, 649. Sprengel, Species Plantarum, Vol. II, p. 759.

Nelumbium luteum

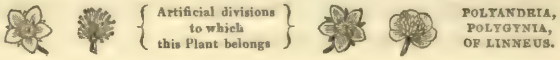
NELUM'BIUM LU'TEUM.

YELLOW NELUMBIUM.

EXOGENÆ, OR DYCOTYLEDONEÆ.

NATURAL ORDER, NELUMBIACEÆ.

THALAMIFLORÆ, OF DECANDOLLE.



POLYANDRIA, POLYGYNIA, OF LINNEUS.

No. 14.

GENUS. NELUMBIUM, (*JUSSIEU.*) CALYX 4-5-sepalus. PETALA 16-28 cum sepalis ad basin tori inserta multiserialia oblonga. STAMINA plura multiserialia, filamentis ultra antheras in appendicem productis. TORUS obconicus per et post anthesin excrescens, superne truncatus, et in alveolos, tot quot carpella exsculptus. OVARIA 8-30 monostyla. CARPELLA nuciformia, in tori alveolis primum occulta, dein libera monosperma. ALBUMEN nullum. EMBRYO crassus, intra carpellum germinans. *DECANDOLLE.* Systema Naturale Regni Vegetabilis. Vol. II, p. 44.

SPECIES. NELUMBIUM LUTEUM. (*WILLDENOW.*) COROLLA polypetala, antheris ultra loculos in appendicem, linearem productis. *DECANDOLLE* Systema, Vol. II, p. 46.

CHARACTER OF THE GENUS, NELUMBIUM. CALYX of 4-5 sepals. PETALS oblong, 16-28 in several rows, inserted along with the sepals into the base of the torus or receptacle. STAMENS numerous, in several rows, filaments prolonged beyond the anthers, so as to form an appendix. TORUS obconical, enlarging during and after the period of fertilizing the ovules, truncated above, and hollowed into as many pits or cavities as there are carpels. OVARIES 8-30; each with one style. CARPELS nut-shaped, at first concealed in the cavities of the torus, ultimately becoming free, each containing one seed. ALBUMEN absent. EMBRYO thickened, germinating within the carpel.

DESCRIPTION OF THE SPECIES, NELUMBIUM LUTEUM. PLANT floating. RHIZOMA horizontal, thick, creeping. PETIOLES and peduncles rising above the surface of the water, roundish. LEAVES perfectly round and centrally peltate, from 1 foot to 18 inches in diameter, of a rich velvety green above, very pale beneath; the upper surface marked by about 25 radiating nerves; petioles from 2 to 3½ feet long, FLOWERS pale yellow, globose, resembling a double yellow

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REFERENCE TO THE PLATE.

1, An unexpanded flower bud. 2, an unexpanded leaf. The drawing of the open flower is half the size of nature.

tulip, about 3 to 4 inches in diameter, springing from a scape about 3 feet in length, which is generally muricate or rough with tubercles towards the upper part, a condition which likewise exists in the upper parts of the petioles. CALYCINE leaves small, reddish green. PETALS about 16, of a lemon yellow colour, in two or more rows, the interior ones narrower. STAMENS numerous, the anthers drawn out beyond the cells into a linear appendage. TORUS obconical, truncate above, with several depressions containing the carpels, which become caryopsides, each containing one seed.

POPULAR AND GEOGRAPHICAL NOTICE. This most beautiful species of water-lily is native of the lakes, rivers, and stagnant waters of North America, extending from New Jersey, to East Florida: and inwards as far as Louisiana. It is believed to have been introduced into the ponds and lakes in Brobston Meadows, near Philadelphia, its natural limits not being supposed to reach so far North; though Michaux appears to have met with it in the district of Illinois. Walter mentions having met with a variety with white flowers. Some writers regard this as a variety only of the Nelumbium speciosum, the Sacred or Egyptian Bean of the ancients. In this opinion Barton concurs both in his Prodromus, and also in his Compendium Floræ Philadelphicæ. Whatever may be the accuracy or incorrectness of this opinion, all will agree with him when he states "There is not surely in North America any plant comparable to this for grandeur, simplicity, and beauty. Truly it may be styled the Queen of American Flowers." It is the largest flower produced in N. America, that of Magnolia macrophylla excepted. It seems conscious of the place assigned it, and its beautiful flower, being raised on a flexible stem three or four feet above the water, waves to and fro in the most majestic manner. It generally keeps near the edges of the rivers, but Bartram has seen it extend across Cape-Fear river, in North Carolina, though two miles broad and twelve feet water, its leaves covering many acres and forming a delusive wavy plain.

"Near the moist brink
Of music-loving streams they ever keep,
Oft, laughing, drink
Of the mad torrent's spray, perched near the thundering steep;

And every where
Along the plashy marge, and shallow bed
Of the still waters, they innumerous spread,
Rocked gently there."

H. PICKERING.

Nor are they merely ornamental plants, for independently of their affording shelter to the fish, and often a resting-place to birds, their seeds are sweet and pleasant eating, and are favorites with the native Indians and boys.

The flower, like that of the Nymphæa alba or white water lily of the lakes of Europe, closes at sunset, and opens on the following day, the object being to exclude the humidity that is deposited from the air, and which, if it had access to the pollen while yet in the anthers, would rupture it prematurely and prevent the fertilization of the ovules, thereby hindering them from becoming perfect seeds. This regularity in the opening and closing of the flowers, dependent upon the intensity of light, caused Linneus to place the water-lily on his Dial of Flowers; and has been frequently remarked by the poets, as the most noted example of those plants which "dedicate their beauty to the sun."

"Mark where transparent waters glide,
Soft flowing o'er their tranquil bed;
There, cradled in the dimpling tide,
Nymphæa rests her lovely head.

But conscious of the earliest beam,
She rises from her humid rest,
And sees reflected in the stream,
Her spotless purity of breast,

Till the bright day-star to the west
Declines, in Ocean's surge to lave,
Then folded in her modest vest
She slumbers in the rocking wave."

MRS. CHARLOTTE SMITH.

The mode of germination of Nelumbium luteum has been most beautifully represented and elucidated by Poiteau, in the Annales du Museum d' Histoire Naturelle, Vol. 13, p. 395, t. 29, f. 42-46.

INTRODUCTION; WHERE GROWN; CULTURE. This species of Nelumbium appears to have been introduced into Britain in 1810. Our drawing was taken from a plant which flowered splendidly in September last, in the stove of Mr. Miller, at Durdam Down Nursery, near Bristol. It requires to be kept in a very warm situation in the stove. Sweet in his Botanical Cultivator states that "It should be grown in a large pot, in a rich loamy soil, and requires a strong heat to flower it in perfection. The pot or tub should be kept full of water all the time the plants are growing, but may be allowed to get dry when the flowering season is over. The plant may be increased by dividing at the root, but is obtained more readily from seeds, which vegetate freely." In order to sow the seeds successfully it is necessary to surround them

with a mass of clay, before they are thrown into the water, that they may be kept at the bottom. Some cultivators of Nelumbiums always carefully open the points of their seeds, and then keep them in water, in the stove, till they begin to vegetate. They are then planted in large pots, half filled with strong loam, and filled up with water—the water being frequently changed with care, and the plants repoted as their size may demand.

Derivation of the Names.

Nelumbium, a latinized form of Nelumbo the Cingalese name of Nelumbium speciosum. Decandolle prefers this name to that of Cyamus, which Sir James E. Smith, and Mr. Salisbury wished to impose upon this genus, not only on account of its priority, but because the name Cyamus has been bestowed by Latreille upon a genus of Crustaceous animals. Luteum, from luteus, yellow, alluding to the colour of the flower.

Synonymes.

Nymphæa nelumbo, Linneus, var. β. Species, 730.

Nelumbium luteum, Willdenow, Species Plantarum, 2, p. 1259.

Cyamus flavicomus, Salisbury Annals of Botany, Vol. II. p. 75, also Pursh, Flora Boreali-Americana, 2, p. 389.

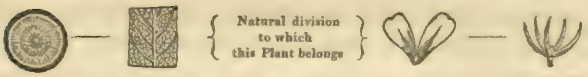
Cyamus luteus, Nuttal, Genera of American Plants, 2, p. 25, also Barton Compendium Floræ Philadelphiæ, 2, p. 27.

Phlox Drummondii

PHLOX DRUMMON'DII.

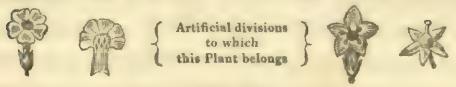
DRUMMOND'S PHLOX.

EXOGENÆ, OR DICOTYLEDONEÆ.



NATURAL ORDER, POLEMONIACEÆ.

COROLIFLORÆ, OF DECANDOLLE.



PENTANDRIA, MONOGYNIA, OF LINNEUS.

No. 15.

GENUS. PHLOX. CALYX prismaticus 5-fidus. COROLLA tubo-elongato limbo hypocrateriformi 5-lobo. STAMINA inæqualia tubo inserta. CAPSULA 3-locularis 3-valvis, subtrisperma. *SPRENGEL.*

SPECIES. PHLOX DRUMMONDII. ANNUA, patenti-pilosa erecta, foliis oblongis acutis aristatis, basi-subcordatis semiamplexicaulibus, infimis subspathulatis, floribus corymbosis, calycis laciniis subulatis acuminatissimis reflexis corollæque tubo (calycis tubum ter excedente) hirsutissimis. *HOOKER.*

CHARACTER OF THE GENUS, PHLOX. CALYX prismatical 5-cleft. COROLLA having an elongated tube, and a 5-lobed salver-shaped limb. STAMENS unequal, inserted upon the tube of the Corolla. CAPSULE 3-celled, 3-valved, containing 3 seeds.

DESCRIPTION OF THE PRESENT SPECIMEN. ROOT small, annual. STEM 1½ to 2 feet high, branched, covered with tomentum and a few long spreading hairs, lower leaves opposite, oblongo-spathulate, superior alternate, ovate, oblong, slightly aristate, somewhat cordate at the base, occasionally auriculate, and semi-amplexicaul, slightly ciliated at the margin, and hairy, all of a pale green colour. CORYMBS terminal, of several shewy flowers. PEDICELS short, they as well as the calyx and awl-shaped bracteas, covered with long spreading hairs, occasionally glandular at the top. CALYX of 5 long awl-shaped segments, but united by a pellucid membrane for about half their length into a tube; limb reflexed. COROLLA salver-shaped, tube about thrice as long as the tube of the calyx, hairy, hairs spreading, limb of 5 spreading, obovate, somewhat rhomboidal lobes, pale purple without, within of brilliant rose-red, but of varying intensity in different individuals. STAMENS included within the tube, but of different lengths. FILAMENTS nearly their whole length adherent to the tube. OVARY ovate. STIGMAS 3, as long as the style. CAPSULE ovate-globose, tipped with the persistent style and included in the persistent calyx.

REFERENCE TO THE DISSECTIONS.

1, Corolla laid open. 2, Ovarium transversely cut. 3, Calyx laid open, showing the ovarium and style.

Introduction; where grown; Culture. It was raised in several gardens, in Great Britain, in 1835, from seeds collected in Texas, and and transmitted hence by the late Thomas Drummond.

The specimen from which our drawing was made, was obligingly sent us by R. Nuttall, Esq. of Kempsey, Worcestershire. It had been previously exhibited at a meeting of the Worcestershire Horticultural Society, where its beauty and novelty excited much admiration. Notwithstanding the number of beautiful species contained in this genus, the present plant is the first annual one which has presented itself, and certainly is a most desirable addition to the flower garden. We also received specimens of it from Mr. Miller, of the Bristol Nursery, amongst which were flowers of various shades from a pale pink to a rich deep crimson. As an annual this Phlox requires no peculiar treatment, and is equally suited to ornament the greenhouse or the open borders. Our friends will be gratified to know that when favourite varieties occur these may be increased by cuttings. We struck several of these last summer, (1836) and although when placed under glass, in a northern border, their roots were emitted rather tardily, the season being far advanced, on being removed to the greenhouse the young plants grew with renewed vigour, and have flowered partially through the whole of the winter. If the cuttings be rooted early in the season, there can be no doubt but they may be safely wintered in a cold frame.

Derivation of the Names.

Phlox, from Φλὸξ a flame, from the brilliant red colour of the flowers. Drummondii, in honour of the late Thomas Drummond, originally of the Forfar Nursery, afterwards the assistant naturalist of Sir John Franklin's overland expedition, subsequent to which he settled at Belfast, but a few years ago set out to explore the Southern regions of the united states, whence he sent many valuable species and seeds, and afterwards proceeded to Cuba, where he died in 1835.

Synonymes.

Phlox Drummondii. Sir W. J. Hooker in Botanical Magazine, plate 3441, Sweet's Flower Garden, 316.

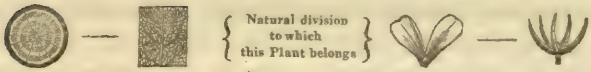
Ceanothus collinus

Mille del

CEANOTHUS COLLINUS.

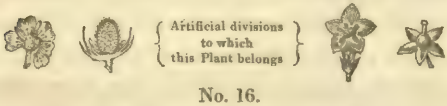
CEANOTHUS OF THE HILLS.

EXOGENÆ, OR DICOTYLEDONEÆ.



NATURAL ORDER, RHAMNACEÆ.

CALYCIFLORÆ, OF DECANDOLLE.



PENTANDRIA, MONOGYNIA, OF LINNEUS.

No. 16.

GENUS. CEANOTHUS. *LINNEUS.* CALYX 5-fidus campanulatus, post anthesin medio circumscissus, basi sub fructu persistente, sub-adhærente. PETALA 5 parva longè unguiculata fornicata, rariùs nulla. STAMINA exserta, antè petala. STYLI 2-3 ad medium coaliti. BACCA exsucca 3-locularis (rarius 2-4 locularis,) cocculis chartaceis 1-spermis basi perviis latere interiore dehiscentibus. SEMINA ovata sulco destituta. *DECANDOLLE.*

SPECIES. CEANOTHUS COLLINUS. *DOUGLAS.* FOLIIS ovato-oblongis, obtusis, glanduloso-crenulatis, 3-nerviis, supra glabris, nitentibus, subtus adpressè pilosis, nervis conspicuis; stipulis subulatis, pedunculis axillaribus, paniculis laxis.

CHARACTER OF THE GENUS, CEANOTHUS. CALYX five-cleft, campanulate, the upper portion after the period of fertilization separating circularly from the lower, which remains under the fruit, to which it slightly adheres. PETALS five, small, with very long claws, the limb cucullate, seldom absent. STAMENS protruding, opposite the petals. STYLES 2-3 united as far as the middle. BERRY dry 3-celled, rarely 2 or 4-celled, cocci parchment-like one-seeded, open at the base, dehiscing on the inner side. SEEDS ovate, devoid of a furrow.

DESCRIPTION OF THE SPECIES, CEANOTHUS COLLINUS. LOW SHRUB, branched, branches spreading, round, nearly smooth. LEAVES alternate, stipulate, (stipules awl-shaped,) petiolate, ovato-oblong, obtuse, minutely crenulate and glandulose at the margin, three-nerved, nerves proceeding from the summit of the petiole, nearly simple, the central one only becoming branched near the apex of the leaf, nerves more conspicuous on the under surface than the upper; upper surface smooth, shining, under surface clothed with closely adpressed hairs, which are most obvious along the course of the nerves. PEDUNCLES axillary, branched, forming loose panicles of whitish flowers. CALYX minute,

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REFERENCE TO THE DISSECTIONS.

1, The whole flower magnified. 2, The calyx removed, showing one of its small long-clawed petals, with its opposite stamen.

5-lobed. Corolla of 5 petals, spreading. Stamens 5, filaments slender, anthers two-celled. Ovary surmounted by a single style, stigma capitate.

Popular and Geographical Notice. This hardy ever-green shrub is one of those for which we are indebted to the zeal and intrepidity of the unfortunate Douglas, who, by the number of American plants he introduced into Britain, has secured for himself the grateful remembrance of all genuine lovers of the sciences of botany and horticulture. From the apparent hardiness of this shrub, and its very free production of flowers about the month of May, it promises to become a desirable addition to this class of plants. Its height, as far as can at present be judged, will be from three to four feet; it is spreading and ornamental.

Introduction; where grown; Culture. Seeds of this species were forwarded by Mr. Douglas, in 1826-7, to the Horticultural Society of London, by which they were distributed; some having fortunately fallen to the share of Messrs. Pope and Sons of the Handsworth Nursery, by whom the present plant was raised: all the other seeds having failed. The cause of their general failure is to be found in the peculiarity of the seeds of this, and several other plants, requiring to be sown immediately after attaining maturity, for if kept any considerable time they lose their vegetating power. The long voyage proved destructive to the germinating property of the whole seeds of the collection, save that above mentioned (see Botanic Garden, No. 572, article Ceanothus intermedia.) The venation of the leaves is of that peculiar kind which is characteristic of the Rhamnaceæ.

Derivation of the Names.

Ceanothus. Κεανωθος keanothus, a name given by Theophrastus to a thorny plant, but which has been transferred to this genus, no species of which was known to the ancients. Collinus, from collis, a hill, from its inhabiting hilly districts.

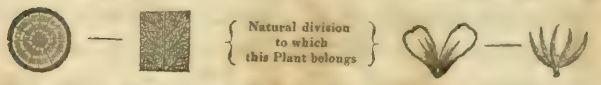
Sophospermum scandens.

Mrs E. Bury. del

LOPHOSPER'MUM SCAN'DENS.

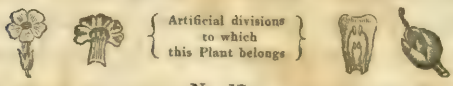
CLIMBING LOPHOSPERMUM.

EXOGENÆ, OR DICOTYLEDONEÆ.



NATURAL ORDER, SCROPHULARIACEÆ.

COROLLIFLORÆ, OF DECANDOLLE.



DIDYNAMIA, ANGIOSPERMIA, OF LINNEUS.

No. 17.

GENUS. LOPHOSPERMUM. *DON.* CALYX 5-partitus. COROLLA campanulata; limbo 5-lobo, subæquali. CAPSULA bilocularis, irregulariter dehiscens. SEMINA imbricata, membranaceo-alata. *DON.* Transactions of Linnean Society, Vol. XV, p. 351.

SPECIES. LOPHOSPERMUM SCANDENS. *DON.* FOLIIS cordatis acuminatis inciso-serratis, PEDUNCULIS ebracteatis, CAULE herbaceo. *DON.*

CHARACTER OF THE GENUS, LOPHOSPERMUM. CALYX 5-parted. COROLLA campanulate; limb 5-lobed, nearly equal. CAPSULE 2-celled, dehiscing irregularly. SEEDS imbricated, with a membranous wing.

DESCRIPTION OF THE SPECIES, LOPHOSPERMUM SCANDENS. This is an extremely handsome herbaceous climbing plant. BRANCHES cylindrical, copiously clothed with soft viscid jointed hairs. LEAVES alternate, numerous, petiolate, cordate, acuminate, inciso-serrated, rough, 5-nerved, from 3 to 4 inches long, and 2 to 3 broad. PETIOLES roundish, villose, 2 inches long. FLOWERS pendulous. PEDUNCLES axillary, solitary, one-flowered, round, villose, without bracts, nearly twice as long as the petioles, turned together with the leaves to one side of the stem. CALYX rough, deeply 5-parted: the segments ovate, acuminate, entire, or here and there exhibiting a slight tooth, the two exterior broader than the others. COROLLA large, showy, campanulate, pink inclining to purple, twice as long as the calyx, tubular at the base, dilated at the throat, limb 5-lobed, nearly equal, lobes broad, rounded at the top, with imbricated æstivation. STAMENS 4, didynamous, fertile, inserted on the lower part of the tube, a little shorter than the corolla. FILAMENTS linear, compressed, glandulose at the upper part. ANTHERS two-lobed, two-celled, not pointed, naked. OVARY globose, two-celled. STYLE very long, slender, filiform, smooth, thicker below. STIGMA simple, emarginate. CAPSULE spherical, crowned by the persistent base of the style, two-celled, nearly two-valved, splitting irregularly. SEEDS numerous, imbricated, ascending,

compressed, surrounded by a membranous or scarious, irregular margined border, truncate at the top, and having at the base a depressed hilum.

Popular and Geographical Notice. This truly magnificent plant, as Professor Don justly terms it, was first made known to Europeans as a native of Mexico by Sesse and Mocinno, whose specimens are still preserved in the herbarium of Mr. Lambert. The species here figured is the genuine scandens, as Professor Don has been so obliging as to determine for us; that which commonly passes for such being the Lophospermum erubescens. Both are climbing plants, and desirable subjects for cultivation, possessing the great advantage of unfolding a succession of flowers for some months. This depends upon the progressive development of the main stem and branches throughout the summer and autumn months, whilst the flowers being axillary are also continually produced as the new leaves are formed. The same habit is seen in the Maurandia, a genus very closely allied to Lophospermum.

Introduction; where grown; Culture. Although this plant was made known by Professor Don, from dried specimens in the Lambertian herbarium, it is to William Bates, Esq. that we are indebted for the introduction of its living roots to this country. Mr. Bates found it growing very generally over bushes, making a splendid appearance in the valley of Mexico. Here he observed other species also, and amongst them one with pure white flowers. Our present plant first flowered in the collection of Charles Tayleure, Esq. of Toxteth Park, who presented it to the Liverpool Botanic Garden. From the rich collection of this most important establishment specimens were liberally handed to Mrs. E. Bury of Everton, to whose kindness and talent we are indebted for the present correct delineation.

Mr. Shepherd, the Curator, informs us that its root is thick and fleshy, not unlike those of the Dahlia. He further states that he planted it last spring (1836) against a south wall, to which it was trained. Here it grew as luxuriantly as the Lophospermum erubescens. In the autumn the root was covered over with dry peat earth, to the depth of about eight inches; and on examining it in the present month of April, he found it perfectly sound, and beginning to grow.

Derivation of the Names.

Lophospermum, from λοφος, lophos, a crest, and σπερμα, sperma, a seed, in allusion to the form of its seeds. Scandens, climbing.

Synonymes.

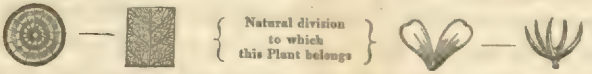
Besleria Scandens. Sesse and Mocinno, MSS. Lophospermum scandens, Don. Transactions of Linnean Society, Vol. XV, p. 353.

Galphimia glauca.

GALPHI'MIA GLAU'CA.

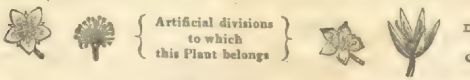
GLAUCOUS-LEAVED GALPHIMIA.

EXOGENÆ, OR DYCOTYLEDONEÆ.



NATURAL ORDER, MALPIGHIACEÆ.

THALAMIFLORÆ, OF DECANDOLLE.



DECANDRIA, TRIGYNIA, OF LINNEUS.

No. 18.

GENUS. Galphimia. *Cavanilles.* Calyx 5-partitus eglandulosus. Petala unguiculata ovalia aut oblonga. Stamina 10, ferè libera. Styli 3. Fructus 3-locularis, 3-coccus, cocculis dorso dehiscentibus 1-spermis. *Decandolle.* Prodromus Systematis Universalis Regni Vegetabilis, Vol. I, p. 582.

SPECIES. Galphimia Glauca. *Cavanilles.* Foliis ovatis obtusis glabris subtùs glaucis basi utrinquè 1-dentatis, petiolis eglandulosis. *Decandolle.* Prodromus Systematis Universalis Regni Vegetabilis, Vol. I, p. 582.

Character of the Genus, Galphimia. Calyx 5-parted, destitute of glands. Petals unguiculate, oval, or oblong. Stamens 10, nearly free. Styles 3. Fruit three-celled, being formed of three 1-seeded cocci, which open at the back.

Description of the Species, Galphimia Glauca. Stem shrubby, in its native country about six feet high, branched, branches round, reddish. Leaves opposite, several times longer than the petioles, ovate, one-toothed towards the base on each margin, tooth short, upper surface green, under surface glaucous. Flowers racemose, terminal, the pedicels opposite, solitary, springing from the axil of an acute bract. Calyx deeply 5-parted, segments ovate, spreading. Corolla several times larger than the calyx, petals yellow, often reddish towards the tip. Stamens 10, scarcely united at the base, filaments and anthers yellow. Anthers oblong. Ovary ovate, three-furrowed, crowned by three distinct styles, three-celled, one seed in each coccus, which splits at the back to permit its escape. Seeds exalbuminous.

Popular and Geographical Notice. All the species of the genus Galphimia yet known are natives of Mexico, and have yellow flowers: this species grows in the district of Acambaro and Salvatierra. The genus Galphimia differs from Byrsonima, a genus formed by

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Reference to the Dissections.

1, Transverse section of the seed-vessel. 2, perfect seed-vessel, deprived of the calyx. 3, 4, petals. 5, 6, back and front view of a stamen.

Richard at the expense of the genus Malpighia, only by the deficiency of glands on the calyx. The two genera have many points in common, and a peculiarity of several species of Malpighia appears to exist in the present subject of observation, viz. the very thin scale-like character of the leaf-bud in the axil of the leaves; this condition of the leaf-bud is likewise found in some species of Erythroxylon, which belongs to a tribe very closely allied to the Malpighiaceæ.

Introduction; where grown; Culture. This species was introduced into Great Britain, we believe, in 1830, by the Rev. Mr. Keen, of Leatherhead, Surry, who raised it from seeds, received from South America. For the specimen from which our drawing was taken, we are indebted to J. Jarrett, Esq. of Camerton House, Somersetshire. It is an elegant plant for the greenhouse; and although it can scarcely be called a climber, it is indispensable that it be trained to a treillage or other support; or along the rafters of the greenhouse, where its numerous odoriferous flowers become highly ornamental. Some cultivators of this plant have kept it in the stove, but this does not appear to be requisite to the successful growth of the plant; indeed, it is by no means improbable but it may bear the open air, against a wall of southern aspect, where it may have protection from the severity of our variable winter climate. It grows freely in light loamy soil, or mixture of loam and peat, with well decayed manure. Cuttings strike root very readily, placed in sand under a hand-glass, with heat.

Derivation of the Names.

Galphimia, an anagram of Malpighi, a being added for the termination; adopted in honour of Malpighi, an eminent Italian physiologist and vegetable anatomist of the seventeenth century. Glauca, from glaucus, alluding to the bluish green colour of the leaves.

Synonymes.

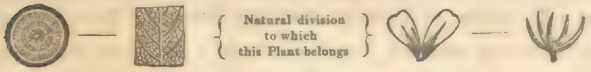
Galphimia Glauca. Cavanilles Icones et Descriptiones Plantarum, Vol. V, p. 61, plate 489. Decandolle, Prodromus, Vol. I, p. 582. Sprengel, Species Plantarum, Vol. II, p. 385. G. Don's Dictionary of Gardening and Botany, Vol. I, p. 639.

Hibiscus roseus

HIBIS'CUS RO'SEUS.

ROSE-COLOURED FLOWERED HIBISCUS.

EXOGENÆ, OR DICOTYLEDONEÆ.



NATURAL ORDER, MALVACEÆ.

THALAMIFLORÆ, OF DECANDOLLE.

MONODELPHIA, POLYANDRIA, OF LINNEUS.

No. 19.

GENUS. Hibiscus. *Linneus.* Calyx cinctus involucello sæpiùs polyphyllo, rariùs foliolis paucis aut inter se coalitis. Petala hinc non auriculata. Stigmata 5. Carpella in capsulam 5-locularem coalita, valvis intùs medio septiferis, loculis polyspermis, aut rariùs 1-spermis. *Decandolle.* Prodromus, Vol. I, p. 446.

SPECIES. Hibiscus Roseus. *Thore.* Foliis cordatis dentatis subtrilobis subtùs cano-tomentosis, pedicellis axillaribus à petiolo liberis, 1-floris, suprà medium articulatis. *Decandolle.*

Character of the Genus, Hibiscus. Calyx surrounded by a many-leaved, rarely by a few-leaved involucellum, occasionally united at the base. Petals not auricled on one side. Stigmas 5. Carpels united into a 5-celled capsule, each valve with a dissepiment from the middle of its inner side, the cells many—or rarely one-seeded.

Description of the Species, Hibiscus Roseus. Root perennial, from which spring several stems, which are simple, about three or four feet high, somewhat angular, and covered with short stellate hairs. Leaves alternate, occasionally opposite, cordate, toothed, slightly 3-lobed, teeth blunt; the hairs, which are numerous on both, but especially the under surface, on which they resemble a white down, give a soft velvety feel to the leaves when touched. Petioles about an inch or more in length, slightly flattened on the upper surface, rounded below, likewise clothed with short stellate hairs. Pedicels axillary, free from the petioles, jointed above the middle, one-flowered. Flowers large, showy. Involucre, or, as it is by some writers termed, outer calyx, formed of eighteen or twelve bracts, which are linear, acute, very hairy, and cohering at the base, so as to form a ring round the proper calyx, which is tubular, campanulate, five-toothed, covered with a short close down, marked with numerous longitudinal veins. Teeth ovate, acute. Corolla formed of five petals, slightly cohering at the base, during æstivation spirally twisted, when fully expanded spreading, of a delicate rose tint, obovate, slightly notched,

traversed by ten or twelve longitudinal veins, which are pinnately branched. Stamens numerous, united into a column, surrounding the style, the external stamens separating from the internal ones at a lower point of the main column as it ascends; anthers kidney-shaped; pollen pale yellow. Ovary 5-lobed, 10-furrowed. Style somewhat longer than the stamens, 5-parted towards the apex, each segment thickly clothed with long spreading hairs, and terminating in a flat capitate stigma.

Popular and Geographical Notice. A hardy perennial herbaceous plant, from two to four feet high, producing from July to October a number of beautiful rose-coloured flowers. It is a native of Gascony, growing on the banks of the river Adour. The species of the genus Hibiscus are natives rather of warm than temperate climates: among those of the West Indies is the Hibiscus mutabilis, or changeable rose-hibiscus, the flowers of which are white in the morning, pale red at noon, and bright red in the evening; but this change does not happen if the thermometer fall below 67° of Fahrenheit, but it then passes indirectly into yellow, the colour assumed by the petals of most of our fruit trees when dying. The seeds of most hibisci are mucilaginous and nutritive; hence those of several species are used in the Levant to thicken soups.

Introduction; where grown; Culture. This fine species of Hibiscus was first raised in England in 1827, from seeds collected in Italy, by the Hon. W. F. Strangways; our drawing was, however, made from a plant raised in the Birmingham Botanic Garden, from seed taken from a dried specimen received by F. Westcott, Esq. from the German Union. Very few collections possess this species. It may be increased slowly by division; and also by cuttings of the young shoots, taken off when about three inches high, with a heel of the hard substance of the crown to them. It should be planted in a deep soil, and remain undisturbed. A rather moist situation for it has been thought most suitable.

Derivation of the Names.

Hibiscus. The word ἰβισκος occurs in Dioscorides, but it is supposed to apply to some kind of mallow. It is said to be derived from ibis a stork, that bird eating the seeds. Roseus, from rosa, alluding to the colour of its flowers.

Synonymes.

Hibiscus Roseus. Thore in Loiseleur Fl. Gall. 2. p. 434. Decandolle, Flore Française, Suppl. p. 626. Sweet's Flower Garden, 277. Decandolle, Prodromus Systematis Regni Vegetabilis, Vol. I, p. 450.

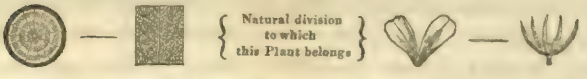
Tymphericarpus mentanus.

Mitchell Weston

SYMPHORICARPOS MONTANUS.

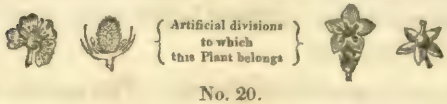
MOUNTAIN ST. PETER'S WORT.

EXOGENÆ, OR DICOTYLEDONEÆ.



NATURAL ORDER, CAPRIFOLIACEÆ.

CALYCIFLORÆ, OF DECANDOLLE.



PENTANDRIA, MONOGYNIA, OF LINNEUS.

No. 20.

GENUS. SYMPHORICARPOS. *DILLEN. ELTH.* CALYCIS tubus globosus, limbus parvus 4-5 dentatus. COROLLA infundibuliformis subæqualiter 4-5 loba. STAMINA 5, breve exserta. STIGMA semiglobosum. OVARIUM adnatum 4-loculatum, loculis fertilibus 1-ovulatis sterilibus pauciovulatis. BACCA calyce coronata 4-loculata, loculis 2 vacuis, 2 monospermis. *DECANDOLLE.* Prodromus Systematis Naturalis Regni Vegetabilis, Pars IV, p. 338.

SPECIES. SYMPHORICARPOS MONTANUS. *HUMBOLDT, BONP.* and *KUNTH.* Floribus axillaribus solitariis, foliis ovatis acuto-submucronatis glabriusculis. *DECANDOLLE.*

GENERIC CHARACTER OF SYMPHORICARPOS. TUBE of the calyx globose, limb small, 4 or 5-toothed. COROLLA funnel-shaped, almost equally 4 or 5-lobed. STAMENS 5, slightly protruding. STIGMA semiglobose. OVARIUM adnate 4-celled, the fertile cells containing one ovulum, the sterile a small number. BERRY crowned with the calyx, 4-celled, 2 cells empty, 2 cells one-seeded.

SPECIFIC CHARACTER OF SYMPHORICARPOS MONTANUS. SHRUB. STEM much branched, branches opposite, round, striated, smooth or pubescent. LEAVES opposite, with short petioles, ovate, acute, slightly mucronate, rounded at the base, entire, reticulately veined, membranaceous, smooth or pubescent on both sides especially the under, of a deep green on the upper, paler on the under surface. FLOWERS axillary, solitary, or rarely geminate, opposite, on very short peduncles, furnished with two bracts, somewhat reflexed and spiked. CALYX adherent to the ovarium (superior), urceolate, smooth, irregularly 5-toothed; teeth acute. COROLLA somewhat funnel-shaped, smooth; limb 5-cleft; segments roundish, equal, thrice as short as the tube; inner side of the throat and tube pubescent. STAMENS 5, springing from the throat of the corolla, with the segments of which they are

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REFERENCE TO THE DISSECTIONS.

1, A seed. 2, a longitudinal section of a seed. 3, entire flower and ovarium. 4, corolla laid open to show the insertion of the stamens. 5, a longitudinal section of the ovarium, showing a fertile and sterile cell. 6, a stamen. All more or less magnified.

alternate, and nearly equal to them in length; filaments short, smooth. Anthers oblong-linear, acute, two-cleft at the base, two-celled, smooth, with a longitudinal dehiscence. Ovary inferior, obovate, smooth, 4-celled, two of the cells 4-5 seeded, the two alternate cells one-seeded, ovules pendulous. Style erect, smooth, shorter than the tube of the corolla. Stigma capitate two-lobed? Berry globose, crowned with the persistent calyx, smooth, white, transparent, two-celled, cells one-seeded. Albumen fleshy. Embryo lodged in the upper part of the albumen, straight, inverted.

Popular and Geographical Notice. This species, according to Humboldt, is scarcely different from his Symphoricarpos microphyllus, (which he seems to have accidentally called Moracensis) except that the leaves and flowers are much larger. Found native at the height of seven or eight thousand feet in the mountains of Mexico, near Santa Rosa, where it flowers and ripens its fruit in September.

Introduction; where grown; Culture. This desirable shrub was raised in the year 1829, in the garden of the late Mr. Barclay, of Bury Hill, from seeds received from Cervantes, professor of botany at Mexico. Other seeds may, possibly, have been introduced to Great Britain, but it is more than probable that from this source have emanated all the plants now existing in this country. That from which our drawing was derived was introduced into the Birmingham Botanic Garden direct from Bury Hill. It is a shrub which at present is very little known amongst nurserymen.

The Symphoricarpos montanus is perfectly hardy. It becomes a dense bush, much branched, five to six feet high, and almost evergreen. It commences flowering in August, and continues it till autumnal frosts check the further progress of its gaiety. It may be rapidly increased by layers, and seems to require no peculiarity of soil or management.

Derivation of the Names.

Symphoricarpos, from Συμφορεω to collect, and Καρπος a fruit, from the berries being crowded close together. Montanus, from mons, a mountain, in reference to its locality.

Synonymes.

Symphoricarpos Montanus. Humb. Bonp. et Kunth. Nova Genera et Species, III, p. 332, t. 296. Decandolle, Prodromus, Vol. IV, p. 339.

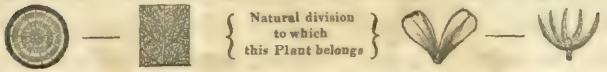
Symphoria Montana, Sprengel, Syst. Veget. Vol. I, p. 757.

Rosa alpina.

RO'SA ALPI'NA.

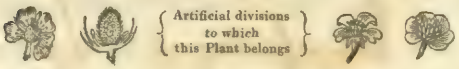
ALPINE ROSE; OR, ROSE OF SHARON.

EXOGENÆ, OR DICOTYLEDONEÆ.



NATURAL ORDER, ROSACEÆ.

CALYCIFLORÆ, OF DECANDOLLE.



ICOSANDRIA, POLYGYNIA, OF LINNEUS.

No. 21.

GENUS. Rosa. *Tournefort.* Calycis tubus apice contractus, limbo 5-partito, lobis per æstivationem apice subspiraliter imbricatis sæpe pinnatim sectis. Petala 5. Stamina plurima. Carpella plurima calycis tubo demùm baccato inserta et in eo inclusa, sicca indehiscentia subcrustacea, è latere interiore stylum gerentia, stylis è calycis tubo coarctato exsertis, nunc omninò liberis, nunc in stylum columnarem accretis. Semen in akenio solitarium exalbuminosum, inversum. Embryo rectus, cotyledonibus planiusculis. *Decandolle.* Prodromus Systematis Universalis Regni Vegetabilis, Pars II, p. 596.

SPECIES. Rosa Alpina. *Linneus.* Caulibus junioribus aculeis debilibus numerosis echinatis, adultis lævibus rarò aculeis validis armatis, foliolis 5-11 ovatis vel obovatis argutè serratis vel duplicato-serratis, stipulis angustis, apice divergentibus, pedunculis post anthesin deflexis calycibusque hispidis vel lævibus. Sepalis indivisis patulis. Fructibus ovatis, rarò subglobosis, pendulis, plus minùsve elongatis, calyce connivente coronatis.

VARIETAS *α*, Vulgaris. *Desvaux.* Pedunculis hispidis elongatis, calycibus lævibus. *Decandolle.* Prodromus Systematis Naturalis Regni Vegetabilis, Pars II, p. 611.

Character of the Genus, Rosa. Tube of the calyx contracted at the throat, limb 5-parted, lobes somewhat spirally imbricated at the apex during æstivation, often pinnately divided. Petals 5. Stamens numerous. Carpels several, springing from, and included in, the tube of the calyx, (which ultimately becomes berried) dry, indehiscent, somewhat crustaceous, bearing a style on the inner side, the styles protruding beyond the contracted throat of the calyx, either entirely free, or united into one columnar style. Achenia one-seeded. Seed without albumen, inverted. Embryo straight, cotyledons nearly flat.

Description of the Species, Rosa Alpina. Variety, Vulgaris or Inermis. Shrub with smooth spreading, sometimes procumbent, stems and branches, of a shining red colour, occasionally hairy or bristly, but not thorny. Leaflets seven or nine, elliptic-oblong,

usually more than an inch in length, thin, smooth, doubly or sharply serrated, paler beneath, with some hairs now and then on the midrib. Flowers generally solitary, of a rich and elegant rose-colour, on drooping red stalks, clothed with glandular bristles. Calyx downy, with long, simple, slender, rather leaf-pointed segments; tube generally smooth, but occasionally with bristles; segments with a few bristles. Petals obcordate, two-lobed. Fruit pendulous, crowned with the connivent segments of the calyx, of a rich deep red colour.

Popular and Geographical Notice. The species of the genus Rosa having been so long the objects of admiration and cultivation, by mankind in almost all countries, have undergone such modifications from variety of soil, climate, and possibly also from hybridization, that it is extremely difficult to determine what are genuine species, what artificial or accidental varieties, and to fix the synonymes. Those synonymes of the correctness of which we feel perfectly satisfied, we shall, as usual, append to the last page, leaving the determination of others to those who may choose to submit them to a more extended examination. This plant is unquestionably the Rosa non spinosa of Haller, Opuscula 218; and the Rosa inermis, foliis septenis glabris, calycis segmentis indivisis of his Historia Plantarum Helvetiæ, Vol. II, p. 42, n. 1107; and the fruit, as we have ascertained by comparison, agrees with that represented in Madame Merian's Insecten Europa's, to which he refers. It is likewise the true Rosa alpina of Linneus's Species Plantarum, Edit. 2, p. 703; and of Smith, in Rees's Cyclopædia, under that name.

The powers of language, both in poetry and prose, have been exhausted in vain attempts to do justice to the charms and beauty of the rose, which, without disparagement to other flowers, may be truly styled "most perfect." The ancients, by dedicating it to Venus, the goddess of beauty, intimated its fitness to be the type of the "το καλον," or "the beautiful;" and her votaries, on her annual festival,

> ——— "with rapturous peal,
> Adored the queen, and in their songs proclaimed
> The rose, the ensign of her conquering power."

Poets—

> ——— "for bards have ever loved
> The queen of flowers, the flower of beauty's queen;"

have vied with each other to produce the most acceptable tributary strain, from the multitude of which it is difficult to select the best; but

we think we do not err when we give the preference here to two stanzas of a longer poem than our pages will allow us to extract, from a volume, and from the pen of the author of that volume, (Mr. John Holland) called "Memoirs of the Rose," one volume, 12mo. London, 1824.

"I love the rose,—it is a noble flower,
In colour rich, and opulent of leaves,
And when her summer garland Flora weaves,
She sees no fairer beauty in her bower;
None which, so redolent of perfume, flings
A sweeter fragrance on the zephyr's wings.

I love the rose,—its presence to my eye
Like beauty, youth, like hope and health appears,
Recalling the gay dreams of early years;
And when I smell its fragrance wafted by,
I think of virtue, love, benevolence,
Which moral perfumes round life's paths dispense."

This species is very common in the alpine thickets of Switzerland, Savoy, Dauphiny, Austria, &c. flowering from June to August, and is among the number of

——— "the beauties of the wilderness,
Which make so gay the solitary place,
Where no eye sees them."

Well might Clusius exclaim, in reference to such plants, "Non carent altissimi montes præruptique scopuli suis etiam deliciis." 'The most lofty mountains and most rugged precipices are not without their own peculiar charms.' It has long found a place in botanic, but is not common in private, gardens. It is difficult to account for this neglect, since not only is it "simplex munditiis," elegant in its simple ornature, but it enjoys the rare and envied character of being "the rose without a thorn;" and Milton thought it worthy of admission into his garden of Eden, which contained

"Flowers of all hue, and without thorn the rose."

Introduction; where grown; Culture. For the opportunity of giving a representation of this desirable species of Rose, we are indebted to the Rev. H. T. Ellacombe of Bitton, near Bristol, who kindly sent us flowers in June last, and also fruit in the following autumn. This gentleman observes, that with him it grows about four feet high, and is amongst the earliest bloomers, and the most beautiful. He has long known it as The Rose of Sharon, a title he first heard

applied to it by an old Scotch gardener, who told him that he had known it all his life by this name, because, said he, (clasping his hand round one of the branches near the root, and drawing it all the way to the top) "It is harmless and without a thorn from the root upwards." "Surely," says our Reverend friend, "there is not one of the genus so emblematical of HIM who would not break the bruised reed, and was 'harmless.'" It flourishes in any common garden earth, and is most easily increased by layers.

DERIVATION OF THE NAMES.

ROSA, from the Greek Ροδον, RODON, which, according to the poets, was first white, but was dyed by the blood of Venus, who received a thorn in her foot, when she fled from Mars, after he slew Adonis; or by the blood of Adonis himself, as Bion states in his elegy,

Αἷμα ῥόδον τίκτει, τα δὲ δάκρυα τὰν ἀνεμώναν.—Adonis, l. 66.

"For every gout of blood that fell from him
She drops a tear; sweet flowers each dew supplies—
Roses his blood, her tears anemonies."

CHAPMAN.

ALPINA, from Alps.

SYNONYMES.

ROSA ALPINA. Linneus, Species Plantarum, Edit. secunda, p. 703. Willdenow, Species Plantarum, No. 26. Villars, Plantes de Dauphine, Vol. III, p. 552. Smith, Rees's Cyclopædia, under word Rosa. Miss Lawrance, Collection of Roses from Nature, plate 30.

Dianthus ferrugineus.

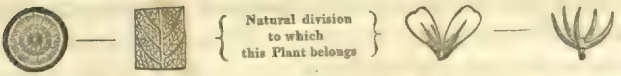
DIANTHUS FERRUGINEUS.

VAR. SULPHUREUS.

RUSTY PINK.

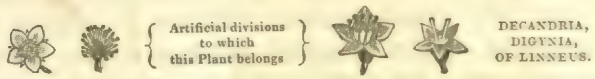
YELLOW VARIETY.

EXOGENÆ, OR DICOTYLEDONEÆ.



NATURAL ORDER, SILENACEÆ.

THALAMIFLORÆ, OF DECANDOLLE.



DECANDRIA, DIGYNIA, OF LINNEUS.

No. 22.

GENUS. Dianthus. *Linneus.* Calyx tubulosus 5-dentatus, basi squamis 2-4 oppositis imbricatis. Petala 5, longè unguiculata. Stamina 10. Styli 2. Capsula 1-locularis. Semina compressa hinc convexa indè concava, peltata. Embryo vix curvatus. *Decandolle.* Prodromus Systematis Universalis Regni Vegetabilis, Pars I, p. 355.

SPECIES. Dianthus Ferrugineus. *Linneus.* Floribus aggregatis, involucris squamisque scariosis rufis oblongis aristatis, calyce paulò breviori-bus, foliis linearibus longè connatis.

Character of the Genus, Dianthus. Calyx tubular, five-toothed, and with two to four scales at its base, placed oppositely and imbricating. Petals 5, with long claws. Stamens 10. Styles 2. Capsule one-celled. Seeds compressed, convex on the outside and concave within, peltate. Embryo scarcely curved.

Description of the Species, Dianthus Ferrugineus. Flowers aggregate, with the scarious involucrum and calyx-scales rufous, oblong, awned, a little shorter than the calyx. Leaves linear, connate at the base to a considerable extent.

Description of the Cultivated Variety. Flowering Stems numerous, about one foot high, rigid, slightly compressed. Leaves on the barren branches (?) Those on the flowering stems about four pair, varying between half to the whole length of the internodia, rigid, erect, linear-lanceolate, pungent, connate from one-sixth to one-fourth their length; margins slightly scabrous, three-veined beneath. Inflorescence in fascicles of about eight flowers, composed of two contracted spikes, nearly sessile, within a pair of involucrate lanceolato-

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Reference to the Dissections.

1, Petal slightly magnified. 2, The germen, two stamens, and a petal, natural size. 3, The calyx and calyx-scales, natural size.

subulate leaves as long as the fascicle. Bracts in opposite pairs, obovate-subulate, the uppermost narrowest, all more or less scarious, striate, and membranous at the edges. Calycine Scales (or partial bracts) two pair to each flower, resembling those on the axes, above half the length of the calyx, the innermost somewhat the broadest, their apiculate summits divaricating. Petals 5, with the claws twice as long as the limb, and clothed along the whole of the inner surface by an appendage attached down the middle and free at the edges; the limbs wedge-shaped, irregularly toothed or jagged at the outer margin, of a clear sulphur colour on the upper surface, which is slightly frosted with a few short pellucid hairs, the under surface partially shaded towards the margin with rusty purplish red. Stamens 10, the five longest alternating with the petals, the five shortest opposite to them, the latter about the length of the claws, the former exserted. Anthers oblong. Germen ovate, five-furrowed at first with the stigmas included, but afterwards much increased, and the stigmas exserted. Styles filamentous, clothed by the stigmas through more than half the inner sides. *J. H. Henslow.*

Popular and Geographical Notice. After minutely examining the characters of the present plant, and comparing it with dried specimens of the nearest allied species, we believe it to be a variety of Dianthus ferrugineus, which Decandolle considers may itself be only a form of Dianthus carthusianorum. Willdenow notices the tendency which the petals of Dianthus ferrugineus have to become yellow on the upper surface, "petala subtus rufa, intus flavescentes;" and in the present variety they show a decided tendency to become rusty purple on the outside. But there is great uncertainty in discriminating the species of Dianthus, and Sir James Smith, in the second volume of the Linnean Transactions, when endeavouring to unravel their synonymes, has described his attempt as having led him into the most inextricable botanical labyrinth he ever entered. The cause of this confusion we feel persuaded must have arisen from the unnecessary multiplication of species in a genus where it has been so long known that some of them at least are subject to great variation. From such a consideration we think there may be sufficient grounds for supposing that such closely allied forms as those of Dianthus carthusianorum, capitatus, and ferrugineus, (and one or two more that might be mentioned) will ultimately prove to be only varieties of one species, as they were originally considered by Linneus. The proportionate length of

the bracteal scales to the calyx, and of the pair of involucral leaves to the head of flowers, are inconstant on the same plant, and consequently very unsatisfactory marks of distinction; and we consider the greater or less degree of compactness in the heads of flowers of still less value. Willdenow's character of the petals of ferrugineus being bifid, with the laciniæ three-toothed, cannot be trusted, and might well be suspected in a genus where the laciniation of the petals of one species, Dianthus caryophyllus, are so well known to sport to a very great extent. The upper surface of the petals of Dianthus carthusianorum are more or less villose, whilst those of Dianthus capitatus have been described as smooth; although in specimens of the latter from Georgia, distributed by the Unio Itineraria, there is a distinct villosity apparent, and in our present plant also these parts are covered with short glandular pubescence.

Introduction; where grown; Culture. This elegant novelty was exhibited last August (1836) at Bristol, to the botanical section of the British Association, by H. F. Talbot, Esq. of Laycock Abbey, Chippenham. This gentleman stated that he had received the seed from which the plant was raised a few years back from Italy. He had found it to be perfectly hardy, and to flower very freely in the open border. Italy and other parts of the south of Europe are prolific in respect to this genus, which occasioned Shaw's allusion in the following lines.

"In fair Italia's bosom born,
Dianthus spreads his fringed ray;
And glowing 'mid the purpled morn,
Adds fragrance to the new-born day.

Oft by some mould'ring time-worn tower,
Or classic stream, he loves to rove,
Where dancing nymphs, and satyrs blithe,
Once listen'd to the notes of love.

Sweet flower, beneath thy natal sky
No fav'ring smiles thy scents invite;
To Britain's worthier regions fly,
And paint her meadows with delight."

It should be remembered that perfumes are held in aversion by the Italians, which circumstance has drawn from the author the above forcible remark.

The Dianthus has been so universal a favourite in our gardens, and so many beautiful varieties have originated under the hand of the

florist, that the difficulty of determining species will not occasion surprise. Phillips, in his Flora Historica, has justly said, "England, as well as Spain, France, Germany, and most other temperate and warm climates, possess a native Pink, but to state how many of them have been changed by cultivation, and from which each peculiar variety first sprang, would be as arduous a task as to attempt to define the parentage of each peculiar apple, which, like the Pink, owes its excellence and variety to the labours of the cultivator. And the Pink, like the apple, continues to demand the attention of man to preserve it from degenerating into its original insignificance; for although the hand of the gardener can double and triple the petals of the Pink, he cannot render their beauties permanent, for nature seems to have allowed her works to bear a temporary improvement only, in order to create industrious habits in man, her most noble and finished work."

Derivation of the Names.

Dianthus, from Διΐος, dios, divine, Ανθος, anthos, a flower; the genus having long been esteemed in horticulture for the beauty of some of its species, especially those varieties of the Dianthus caryophyllus, termed carnations, picotees, and common pinks. Ferrugineus, from the rusty purple colour of the ordinary variety. Sulphureus, from the sulphur-yellow colour of the variety here figured.

Synonymes.

Dianthus Ferrugineus is the only name which the species has borne since it was first given by Linneus in his Mantissa, 563.

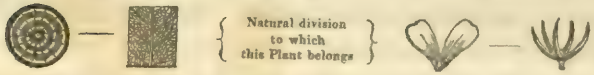
Euphorbia splendens.

Mrs Withers. del

EUPHORBIA SPLENDENS.

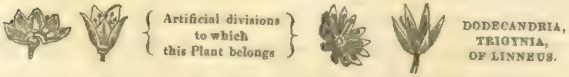
SPLENDID EUPHORBIA.

EXOGENÆ, OR DYCOTYLEDONEÆ.



NATURAL ORDER, EUPHORBIACEÆ.

MONOCHLAMYDEÆ, OF DECANDOLLE.



DODECANDRIA, TRIGYNIA, OF LINNEUS.

No. 23.

GENUS. EUPHORBIA. *LINNEUS.* INVOLUCRUM androgynum 4-5 fidum, extus appendiculis glandulosis, (PETALA Linnei, NECTARIA aliorum.) PERIPHERICI pedicelli incerti numeri, singuli cum singulis staminibus articulati. GERMEN pedicellatum, centrale. STYLI 3, 2-fidi. CAPSULA 3-cocca. *SPRENGEL.* Species Plantarum, Vol. III, p. 758.

SPECIES. EUPHORBIA SPLENDENS. *BOJER.* FRUTICOSA, aculeis validis numerosissimis, foliis oblongo-spathulatis mucronatis, bracteis suborbiculatis mucronatis basi unitis concavis, involucrum includente, filamentis furcatis. *HOOKER.* Botanical Magazine, folio 2902.

CHARACTER OF THE GENUS, EUPHORBIA. INVOLUCRE androgynous, 4-5 cleft, externally furnished with glandular appendages, (called PETALS by Linneus, NECTARIES by other authors.) Those pedicels which are arranged around the central one, are variable in number, each bearing a single stamen, with which it is articulated. OVARY pedicellate, central. STYLES 3, each 2-cleft. CAPSULE formed of three cocci.

DESCRIPTION OF THE SPECIES, EUPHORBIA SPLENDENS. STEM shrubby, branched, both branches and stem beset with strong, straight thorns, pointing in various directions, of a dark colour when old, of a purple hue towards the top of the branches. LEAVES alternate, attenuate at the base, spathulate-oblong, mucronate at the tip, somewhat fleshy, midrib raised, and extending from the base to the top of the leaf, the veins more parallel than is usual in the leaves of exogenous plants, bright green, except when old, then assuming a red or purplish hue, glabrous on both surfaces. PEDUNCLES axillary, jointed in the middle, having at the joint two small bracts, above which they are twice dichotomously divided, at each division furnished with two small bracts; higher still are two large bracts, rose-coloured above, pale pink below, roundish, spreading, united at the base, where they are

cup-shaped and greenish. In the hollow formed by their union is the involucre, consisting of a single piece, cup-shaped, greenish at the base, with five reddish yellow, fleshy, erect or slightly spreading, rounded lobes, alternately with which are five small, red, fleshy lobes or glands, curved downwards and inwards. STAMINIFEROUS FLOWERS numerous, several of them abortive and mixed with numerous hairs. PEDICEL green, but filament with which it is articulated red, forked, each fork bearing a one-celled anther, of a dark purple colour. PISTILLIFEROUS FLOWERS formed each of a solitary pistil surrounded by the stamens. PEDICEL very short. OVARY 3-lobed. STYLE 3-parted or rather one style springing from each coccus, adhering to the others to nearly the middle, then distinct, each style bifid. STIGMAS capitate. FRUIT consisting of three cocci, each containing one cell, and one seed. SEED oblong, blunt at each end, glabrous.

POPULAR AND GEORAPHICAL NOTICE. This very showy species was discovered by Professor Bojer, along the borders of fields in the province of Emirne, in Madagascar. Its native name is Soongo Soongo.

INTRODUCTION; WHERE GROWN; CULTURE. It was introduced into this country by the Horticultural Society about 1827; and to this establishment our thanks are due for permission to make the present delineation of the plant, which has been so beautifully executed by Mrs. Withers. It grows from three to four feet high, and requires to be kept in the stove, where it continues a conspicuous ornament for two or three months; producing flowers, more or less, from Midsummer to Michaelmas. Cuttings strike root readily under a hand-glass.

DERIVATION OF THE NAMES.

EUPHORBIA is an altered termination of the *Ευφορβιον* of Dioscorides, so called after Euphorbus, physician to Juba, king of Mauritania, who made known the properties of some species of this genus, all of which have a milky juice, which is in general acrid, and poisonous from the inflammation it excites; yet the inhabitants of the Canary Islands drink that of the Euphorbia Canariensis, being careful first to strip off the skin or rind in which the acrimony seems chiefly to reside. SPLENDENS, splendid.

SYNONYMES.

EUPHORBIA SPLENDENS. Hooker in Botanical Magazine, folio 2902.

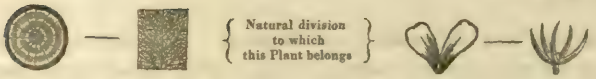
Syringa Josikæa.

Mille del

SYRIN'GA JOSIKÆ'A.

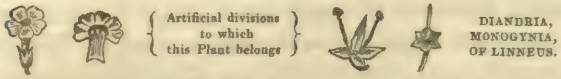
LADY JOSIKA'S LILAC.

EXOGENÆ, OR DICOTYLEDONEÆ.



NATURAL ORDER, OLEACEÆ.

COROLLIFLORÆ, OF DECANDOLLE.



DIANDRIA, MONOGYNIA, OF LINNEUS.

No. 24.

GENUS. SYRINGA. *LINNEUS.* CALYX breve 4-dentatus. COROLLA subhypocrateriformis limbi partitionibus 4, concavis. STIGMA bifidum. CAPSULA ovato-compressa acuminata bilocularis loculicido bivalvis, dissepimento medio longitudinaliter secedente utrinque in valvula persistente. SEMINA oblonga deplana circum alata. *REICHENBACH.* Flora Germanica Excursoria, Vol. I, p. 432.

SPECIES. SYRINGA JOSIKÆA. *JACQUIN, FILIUS.* FOLIIS ovali-acuminatis discoloribus, supra lucidis, subtus albidis, rugosis utrinque glabris, ciliatis.

CHARACTER OF THE GENUS, SYRINGA. CALYX short, four-toothed. COROLLA somewhat salver-shaped, the limb consisting of four concave pieces. STIGMA two-cleft. CAPSULE ovate-compressed acuminate, two-celled, splitting by a loculicidal dehiscence into two valves, the dissepiment splitting down the middle, and one half of it adhering to each valve. SEEDS oblong, depressed in the centre, surrounded with a wing.

DESCRIPTION OF THE SPECIES, SYRINGA JOSIKÆA. An erect shrub, branches spreading, very slightly warted, twigs purple. LEAVES (about three inches long, one and a quarter inches broad) elliptico-lanceolate, attenuated at both extremities, shining and lucid above, white and veined below, wrinkled, glabrous on both sides, ciliated. PANICLE terminal, erect. CALYX, as well as the pedicels, peduncles, rachis, petiole, mid-rib of the leaf, and the branches, closely covered with short glandular pubescence; four-toothed, teeth blunt, and much shorter than the tube. COROLLA half an inch long, clavate, funnel-shaped, deep blue, glabrous, wrinkled, tube slightly compressed; limb erect, four-parted, segments involute at their edges. STAMENS ad-

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REFERENCE TO THE DISSECTIONS.

1, The corolla opened to show the attachment of the anthers. 2, The germen and style. Each part magnified.

hering to about the middle of the tube. ANTHERS incumbent, oblong, yellow. PISTIL much shorter than the tube. STIGMATA large, cohering. STYLE filiform, glabrous. OVARY green, glabrous, two-celled. OVULES 4.

POPULAR AND GEOGRAPHICAL NOTICE. This recent addition to our shrubberies has the recommendation of flowering later than the old species, to which it bears considerable resemblance. It is a smaller shrub, the flowers of a much deeper blue, and with only a faint odour. The tube is longer than in the common species. The leaves greatly resemble those of the Populus balsamifera, or sweet-scented poplar.

INTRODUCTION; WHERE GROWN; CULTURE. It is a native of Transylvania, growing in stony places on the territory of the Countess Rosalie Josika, in the county of Clausenburg, in Siebenbürgen: it was first made known to botanists at the meeting of naturalists at Hamburg, on the 20th of September, 1830, by the younger Jacquin. A plant of it was forwarded by the Messrs. Booth of Flotbeck, near Hamburg, to the Edinburgh Botanic Garden in October, 1832, where it flowered the following year. Our drawing was taken from a small specimen which flowered in the greenhouse of J. T. Jarrett, Esq. of Camerton House, in June last, and which it is probable was not so deep in colour as if it had been grown in the open air, nor the panicles of flowers quite so dense. It is quite hardy, requiring no peculiarity of management.

DERIVATION OF THE NAMES.

SYRINGA. An Arcadian nymph was fabled to have been changed into a reed or pipe, Συριγξ, SYRINX. The name has been applied to this genus, from the use the Turks make of its tubular branches. JOSIKÆA, in honour of the Countess Josika, on whose property it was first observed.

SYNONYMES.

SYRINGA JOSIKÆA. Jacquin in Botanischer Zeitung, 1831, t. 67, p. 399. Reichenbach, Plantæ Criticæ, viii. plate 1049. Reichenbach, Flora Germanica Excursoria, Vol. I, p. 432. Botanical Magazine, pl. 3278. Graham in Jameson's Edinburgh Journal, Vol. XV, p. 385. Botanical Register, pl. 1733.

Oxalis Bowiei.

OX'ALIS BOWIEI.

BOWIE'S OXALIS.

EXOGENÆ, OR DICOTYLEDONEÆ.

{ Natural division to which this Plant belongs }

NATURAL ORDER, OXALIDACEÆ.

THALAMIFLORÆ, OF DECANDOLLE.

{ Artificial divisions to which this Plant belongs }

DECANDRIA, PENTAGYNIA, OF LINNEUS.

No. 25.

GENUS. Oxalis. *Linneus.* Calyx 5-sepalus, sepalis liberis aut basi coalitis. Petala 5. Stamina 10, filamentis basi breviter monadelphis, 5 externis alternis brevioribus. Styli 5, apice penicilliformes aut capitati. Capsula pentagona oblonga aut cylindracea. *Decandolle.* Prodromus Systematis Universalis Regni Vegetabilis, Vol. I, p. 690.

SPECIES. Oxalis Bowiei. *Herbert.* Radice bulbosâ, foliis ternatis, petiolo viridi sexunciali, foliolis magnis, rotundatè obversèque cordatis, viridibus, medio biunciali majore, scapo petiolis longiore viridi nutante, dein suberecto, umbellâ circiter 12-florâ, bracteis minutis rubescentibus, pedunculis 1-3 floris 1½-uncialibus ex viridi rubescentibus curvatis, sub-erectis, dein recte devexis, calycis foliolis oblongis, acutis, rubro marginatis, corollæ tubo luteo, limbo saturatè roseo, expansione 1¼-unciali; staminibus tubo brevioribus, stigmatibus provectioribus, quinque cæteris longioribus; plantâ totâ (perianthio excepto) minutissimè pubescente. *Herbert.* Botanical Register, folio 1585.

Character of the Genus, Oxalis. Calyx of five sepals, which are either free, or united at the base. Petals 5. Stamens 10, the filaments being slightly united at the base into a monadelphous tube, the five external stamens shorter than the internal ones, with which they alternate. Styles 5, either brush-like at the top, or capitate. Capsule five-cornered, oblong, or cylindrical.

Description of the Species, Oxalis Bowiei. Root bulbous, from which spring both leaves and flower-stalks, there being no obvious stem. Leaves ternate, petioles green, about six inches in length. Folioles, or Leaflets, sessile, large, roundly and obversely cordate, green, the central leaflet larger, nearly two inches, the two lateral ones smaller. Scape, or Flower-stalk (of which frequently twelve or more spring up nearly simultaneously, with a succession of younger

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Reference to the Dissections.

1, Petals laid open. 2, Stamens, forming a monadelphous tube around the pistils, the outer row shorter than the inner; and the stigmas protruding between the filaments, with which they alternate. 3, Stamens laid open, showing the outer alternate ones shorter. 4, Pistil.

ones) longer than the petioles, green, nodding, afterwards erect, terminating in an umbel of about twelve flowers, surrounded at the point of division by minute red bracts, the peduncles 1-3-flowered, of a greenish red colour, curved or suberect, but as the flower expands becoming straight. Flowers a beautiful rose-colour. Calycine Segments oblong, acute, red at the margin. Tube of the Corolla yellow, limb red, flower measuring, when fully expanded, about one and three quarters of an inch across. Stamens shorter than the tube, exceeding the stigmas in length, the five internal ones longer than the external. The whole plant, except the flower, clothed with a minute pubescence.

Popular and Geographical Notice. Though the species of Oxalis are to be found in nearly all regions of the earth (the coldest excepted), yet the majority of those known are natives of the Cape of Good Hope, where the present species was found. It is difficult to imagine any one of the numerous species which could surpass this; certainly none equal it either in the size of the leaves, or the size and number of its flowers, reckoning the whole which it produces during the flowering season. The flowers before their expansion are scarcely less beautiful than when quite expanded, so elegantly are their spirally twisted petals arranged. Every part of the plant is worthy of observation. The leaves are compound and jointed, which permits considerable power of motion; and hence when not stimulated by the light, the leaflets, towards evening, begin to recline, and form a sort of cone, of which the summit of the petiole is the apex, as may be seen in leaves of the Oxalis acetosella, or common wood-sorrel. The flowers are also very sensible to light, and only expand thoroughly when the strong clear sun-shine falls upon them. But they may be caused to open by the light of a lamp thrown upon them in a concentrated form, by means of a lens, as was done by Monsieur Boryde St. Vincent, (Annales de Physique, Tome I, p. 112) and so cheated out of their sleep. The term sleep of plants may excite surprise, but many plants exhibit phœnomena analogous to the sleep of animals. Linneus wrote an interesting dissertation on the sleep of plants (De Somno Plantarum, Amœnitates Academicæ, Vol. IV, p. 333); and though it occurs to a greater or less extent in all plants, yet it is chiefly applied to those plants in which it is most perceptible, such as the Oxalis, and other members of the tribe Oxalidaceæ, and those of the Leguminosæ especially, the Robinia Pseudo-acacia, and the Mimosa

pudica, and Mimosa sensitiva. For an exposition of the causes, and accompanying circumstances of the waking and sleeping of animals, see Virey, Philosophie de l'Histoire Naturelle, p. 315.

This species, like all the others, contains oxalic acid in the state of a binoxalate of potass, which makes the leaves a grateful refreshing vegetable, in the warmer climates of the world; but the excessive use of which, for any considerable time, produces serious ill effects. It has been supposed that the gradual formation of vegetable acids and alkalis in plants, is the cause of that change of colour which certain parts are observed to undergo. Thus the corollas of Echium vulgare and Symphytum officinale are red in the bud, but become blue afterwards; that of Myosotis versicolor is first yellow, then blue. A pleasing experiment may be performed by placing a bunch of flowers under a a glass jar and burning a match among them, when the sulphuric acid evolved, immediately alters their colours. So also any infusion of vegetable blue, as that obtained by soaking the corolla of the Violet, Cornflower, Iris, &c. turns red by the application of an acid, and green by an alkali, (see Maund's Botanic Garden, p. 146.) Hence it has been supposed, that the gradual change which takes place in the colour of the leaf in autumn may be accounted for on a similar principle. Another hypothesis supposes the minute globular particles, (or globuline) contained in the cellular tissue to assume different tints of colour, according as it is united with different proportions of oxygen; somewhat in the way that the differently coloured oxides of iron are formed. It has been observed also, that the plant retains a larger portion of the oxygen inhaled by the leaf, as the season advances; and a change of hue ensues. We are thus deprived slowly of the verdure of spring and summer, while the variety of hues, which form the intermediate stages before the woods become universally

——— "in russet clad,
The livery of the closing year,"

are as pleasing to the eye of the painter or the poet, as the tender green of spring, or rich effulgence of summer; furnishing many a touching memento of our own transitory state, thus yielding illustrations alike to the moralist and divine, when pointing our regards to another world, "the fashion of which fadeth not away."

"A deep and crimson streak
Thy dying leaves disclose;
As on consumption's waning cheek,
'Mid ruin, blooms the rose.

Thy scene each vision brings
Of beauty in decay;
Of fair and early faded things,
Too exquisite to stay."

MALCOLM.

INTRODUCTION; WHERE GROWN; CULTURE. This species was received, in the year 1823, from Mr. Bowie, by the Hon. and Rev. William Herbert, of Spofforth, near Harrowgate, so justly celebrated for his cultivation of bulbous plants, and author of a work just published, entitled, "Illustrations of the Amaryllidaceæ."

In regard to its culture, Mr. Herbert states, "This most beautiful and florid plant is hardy, and in the open ground will flower in the autumn; but it blossoms most profusely when kept in a pot under glass, especially if, after a short period of rest at Midsummer, it is placed in a stove or warm greenhouse for a very short time to make it start freely. Its flowers expand in a very moderate temperature." We must not omit to mention, that although we have observed the Oxalis Bowiei live and increase in the open ground, it has never flowered well in such exposure; and we presume that it is under very favourable circumstances only that it will do so. It grows very freely in light sandy loam, either with or without the addition of peat.

DERIVATION OF THE NAMES.

OXALIS, from Ὀξυς, OXYS, sour, alluding to the acid taste of the plants of this genus. BOWIEI, in compliment to Mr. Bowie, who discovered, and sent to Europe, many plants at the Cape of Good Hope.

SYNONYMES.

OXALIS BOWIEI. Herbert in Botanical Register, folio 1585.

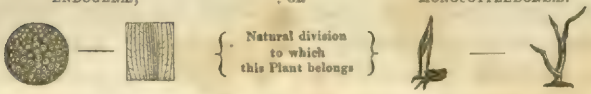
Oncidium crispum.

Miss Taylor, del.

ONCIDIUM CRISPUM.

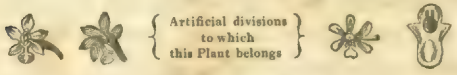
CRISPED-FLOWERED ONCIDIUM.

ENDOGENÆ, OR MONOCOTYLEDONEÆ.



NATURAL ORDER, ORCHIDACEÆ.

GYNANDROSÆ, OF LINDLEY.



GYNANDRIA, MONANDRIA, OF LINNEUS.

No. 26.

GENUS. ONCIDIUM. *SWARTZ.* PERIANTHIUM explanatum. SEPALA sæpius undulata; lateralibus nunc sub labello connatis. PETALA conformia. LABELLUM maximum, ecalcaratum, cum columna continuum, variè lobatum, basi tuberculatum vel cristatum. COLUMNA libera, semiteres, apice utrinque alata. ANTHERA semibilocularis, rostello nunc abbreviato, nunc elongato rostrato. POLLINIA duo, posticè sulcata, caudiculâ planâ, glandulâ oblongâ. *LINDLEY.*

SPECIES. ONCIDIUM CRISPUM. *LODDIGES.* PSEUDO-BULBIS oblongis sulcatis rugosis diphyllis, foliis lanceolatis coriaceis acutis, scapo simplici multifloro, sepalis recurvis undulatis obtusis, lateralibus semiconnatis: petalis duplo majoribus oblongis undulatis unguiculatis, labelli lobis lateralibus cornuformibus recurvis nanis intermedio maximo unguiculato subrotundo-cordato undulato, cristâ duplici serie deltoideâ dentatâ, columnæ alis rotundatis denticulatis carnosis. *LINDLEY.* Genera and Species of Orchideous Plants, p. 197.

CHARACTER OF THE GENUS, ONCIDIUM. PERIANTH spread out. SEPALS often wavy; the lateral ones sometimes connate under the lip. PETALS uniform with the sepals. LIP very large, without a spur, continuous with the column, variously lobed, tuberculated or crested at the base. COLUMN free, semi-cylindrical, apex winged on both sides. ANTHER nearly two-celled, the rostellum sometimes very short, at other times greatly elongated. POLLEN-MASSES two, furrowed behind, the caudicula flat, the gland oblong.

DESCRIPTION OF THE SPECIES, ONCIDIUM CRISPUM. PSEUDO-BULBS oblong, furrowed, rugose, bearing at the summit two leaves, which are lanceolate, coriaceous, acute, 6-7 inches long, marked with purple at the base. SCAPE springing from the base of the bulb, about two feet long, bearing here and there subulate leaves, vaginating, and sometimes connate. INFLORESCENCE racemose, raceme spreading, flowers large, numerous, sometimes 50-60, about three inches across, brownish. SEPALS recurved, undulating, obtuse, the lateral ones half united, greenish, spotted. PETALS twice as large, oblong, undulating,

unguiculate, margin much crisped, obtuse, of a rich brown on the upper surface, marked with dark lines, red towards the claw, which is yellow. LABELLUM, or LIP, greatly contracted towards the base, the lateral lobes horn-shaped, recurved, small, the central lobe large, roundedly cordate or emarginate, waved or crisped. CREST deltoid-shaped, beset with a double row of teeth, yellowish at the base, red towards the summit. WINGS OF THE COLUMN rounded, toothed, fleshy. ANTHER-CASE ovate, acuminate, but truncated at the top. POLLEN-MASSES oval, yellow, on a long, broad, white stalk, furnished with an ovate, brown gland at its base.

POPULAR AND GEOGRAPHICAL NOTICE. This interesting species of Oncidium was found growing among the Organ Mountains of Brazil, on the dead trunks of trees. While in northern climes the barks of trees are clothed with common mosses and lichens, the stems of trees in tropical forests exhibit, in astonishing profusion, the richest and most superb vegetation: the most singular and elegant orchideous plants spring from the clefts and chinks of the bark; and around the stem itself the Pothoses twine, and push forth their white and shining flowers from between their beautiful and bright green leaves. Gazing on such scenes we might be tempted to consider them paradisaical, were it not for the knowledge, sometimes purchased at a fatal price, that "latet anguis in herba,"—amidst the grass on which we tread, the serpent with its poison-fangs, lurks for its prey.

INTRODUCTION; WHERE GROWN; CULTURE. The lovers of orchideous plants are indebted for the introduction of this elegant plant to the zeal and enterprise of the Messrs. Loddiges of Hackney. The specimen from which our drawing was taken flowered in October, 1836, in the handsome collection of William Taylor Copeland, Esq. M. P. at Leyton, Essex. It grows well in a pot filled with drainers and sandy peat, on a stand in the stove. It should have a hot moist atmosphere whilst in vigorous growth.

DERIVATION OF THE NAMES.

The generic name, ONCIDIUM, bears a reference to two prominences on the lip of the first described species, the Oncidium altissimum of Swartz. CRISPUM, alludes to the crisped margin of the petals of this species.

SYNONYMES.

ONCIDIUM CRISPUM. Loddiges' Botanical Cabinet, 1854. Lindley's Genera and Species of Orchideous Plants, p. 197.

Gesneria elongata

Mills del.

GESNE'RIA ELONGA'TA.

ELONGATED GESNERIA.

EXOGENÆ, OR DICOTYLEDONEÆ.

{ Natural division to which this Plant belongs }

NATURAL ORDER, GESNERACEÆ.

CALYCIFLORÆ, OF DECANDOLLE.

{ Artificial divisions to which this Plant belongs }

DIDYNAMIA, ANGIOSPERMIA, OF LINNEUS.

No. 27.

GENUS. GESNERIA. *LINNEUS.* CALYX ovario adnatus; limbo libero, 5-partito. COROLLA tubulosa, superne ampliata; limbo bilabiato; labio superiore emarginato-bilobo, inferiore trifido. STAMINA 4, didynama. STIGMA bilobum. CAPSULA calyce vestita, unilocularis bivalvis; placentis parietalibus duabus, oppositis, bilamellatis. *HUMBOLDT, BONPLAND, ET KUNTH.* Nova Genera et Species Plantarum, Vol. III, p. 315.

SPECIES. GESNERIA ELONGATA. *HUMBOLDT.* FOLIIS oppositis, oblongis, acuminatis, basi acutis, subcrenatis, supra strigoso-scabris, subtus fuscentibus et lanato-tomentosis; pedunculis axillaribus, quadrifloris, elongatis. *HUMBOLDT.* Nova Genera et Species, Vol. III, p. 318.

CHARACTER OF THE GENUS, GESNERIA. CALYX attached to the ovarium; limb free, five-parted. COROLLA tubular, widened towards the upper part; limb two-lipped, upper lip emarginately two-lobed, lower lip three-cleft. STAMENS 4, didynamous. STIGMA two-lobed. CAPSULE, covered by the calyx, one-celled, two-valved; placentæ 2, parietal, opposite, consisting each of two plates, or lamellæ.

DESCRIPTION OF THE SPECIES, GESNERIA ELONGATA. PLANT with quadrangular branches, clothed with rough wool. LEAVES opposite, petiolate, oblong, acuminate, attenuate at the base, nearly entire, about four inches long, nineteen to twenty lines broad, the young leaves crenate, or serrulate, somewhat fleshy, veined, upper surface strigose-rough, under surface woolly, and inclining to a rusty colour, veins purple. PETIOLES about eight lines long, woolly. PEDUNCLES axillary, three inches long, hairy, four-flowered. FLOWERS umbellate, pedicillate, erect, fourteen to fifteen lines long. PEDICELS nearly an inch long, round, pilose. BRACTS 2, placed opposite each other at the base of the pedicels. CALYX woolly or downy, five-cleft, segments ovate, acute, equal. COROLLA tubulose, ventricose towards the apex, bright crimson, externally roughish or pilose, throat a little contracted,

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REFERENCE TO THE DISSECTIONS.

1, Ovarium surmounted by the style, the calyx remaining attached. 2, Corolla laid open to show the four didynamous stamens, with the abortive fifth stamen.

limb five-cleft, segments roundish, nearly equal, spreading, spotted. Stamens 4, didynamous, inserted on the base of the corolla, slightly protruding beyond the throat. Filaments smooth. Anthers ovate, two-celled, cohering in pairs. Ovary half-inferior, pilose. Style pilose, included within the corolla. Stigma two-lobed. Capsule ovate-conical, invested by the persistent calyx, pilose, one-celled; dehiscing only at the apex into two valves; placentæ 2, opposite, parietal, formed of two lamellæ, or plates. Seeds numerous, small.

Popular and Geographical Notice. The majority of plants belonging to the tribe of Gesneraceæ, of which the genus to which our present species appertains is the type, are found exclusively in South America and the West India Islands. The native spot of Gesneria elongata cannot be stated with precision, since Humboldt, who discovered it, does not seem to remember where he found it; he, therefore, sets down Quito as its habitat, but with a note of interrogation, expressive of his doubts as to the accuracy of this locality.

Introduction; where grown; Culture. The leaves of many species of Gesneria, and probably of this one among others, when taken off close to the stem and planted, are capable of producing a new plant, with perfect root and stem. The explanation of which peculiarity may be, that at the base of the petiole of the leaf, where it joins the stem, are situated some latent or undeveloped buds, which, when placed under the new conditions above mentioned, are stimulated and become fully developed; see Professor Henslow's Descriptive and Physiological Botany, page 286, (293) for an account of the leaves of the Bryophyllum; and also at p. 52 (60). Our drawing was made from a plant, two feet high, which flowered in September last, in the stove of the Messrs. Pope, of Handsworth, Staffordshire. Several British cultivators imported this species from the Continent in 1835. We are not aware of its having been introduced previously.

Derivation of the Names.

Gesneria, or (as it ought to be) Gesnera, in honour of Conrad Gesner, one of the fathers of modern natural history, born at Zurich in 1516, died 1565. Elongata, elongated, in reference to the length of the peduncles bearing the flowers, which is greater than in the other known species.

Synonymes.

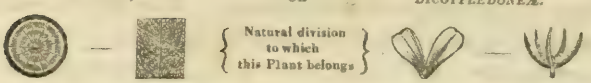
Gesneria elongata. Humboldt, Bonpland, and Kunth, Nova Genera et Species, Vol. II, p. 318, t. 192. Sprengel, Species Plantarum, Vol. II, p. 838.

Rhexia Mariana.

RHEXIA MARIANA.

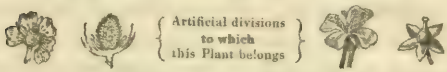
MARYLAND RHEXIA.

EXOGENÆ, OR DICOTYLEDONEÆ.



NATURAL ORDER, MELASTOMACEÆ.

CALYCIFLORÆ, OF DECANDOLLE.



OCTANDRIA, MONOGYNIA, OF LINNEUS.

No. 28.

GENUS. Rhexia. *Robert Brown.* Calycis tubus basi ovato-ventricosus, apice in collum angustatus, limbo 4-fido persistente. Petala 4, obovata. Antheræ 8, connectivo non perspicuo nec auriculato. Capsula in ventre calycis libera 4-locularis; placentis lunatis pedicillatis. Semina cochleata. *Decandolle.* Prodromus Systematis Universalis Regni Vegetabilis, Pars III, p. 121.

SPECIES. Rhexia Mariana. *Linneus.* Caule tereti hirsuto, foliis subpetiolatis lanceolatis utrinque acutis 3-nerviis, calyce glabriusculo. *Decandolle.*

Character of the Genus, Rhexia. Tube of the Calyx ovato-ventricose at the base, contracted at the apex into a neck, limb four-cleft, persistent. Petals 4, obovate. Anthers 8, the connectivum neither visible nor prolonged at the base. Capsule free in the swollen tube of the calyx, four-celled, the placentæ lunate and pedicellate. Seeds cochleate.

Character of the Species, Rhexia Mariana. A perennial herbaceous plant, about one foot high. Stem erect, branched. Branches opposite, roundish, slightly hairy. Leaves opposite, lanceolato-oblong, acute, contracted at the base, reticulately three-nerved, sharply toothed, teeth pointed with hairs, bright green. Floral Leaves small, lanceolate, bract-like. Petioles short, channelled, with scattered hairs. Flowers with short smooth pedicels. Calyx tubuloso-campanulate, ventricose at the base, membranaceous. Petals 4, adhering to the limb of the calyx, spreading, roundish, faintly mucronate, smooth, purple. Stamens 8, protruding. Anthers linear, somewhat falcate, yellow, smooth, two-celled. Ovary ovato-globose, smooth. Style slender, smooth, scarcely longer than the stamens. Stigma thickened, truncate.

Reference to the Dissections.

1, Flower, calyx laid open to show a petal adherent to the tube as high as its summit. 2, Ovary cut across. 3, Lunate placentæ. 4, Seeds (natural size). 5, Seeds; all more or less magnified.

Popular and Geographical Notice. All the species of the genus Rhexia, at present known, are natives of North America, and our present subject is found in several states, from New Jersey to Carolina; also in Maryland and Louisiana. They are characterized, among the other members of the tribe, by their four-cornered stems, their sessile entire linear-lanceolate or ovate, three-nerved leaves, and the flowers, which are ternate, of a purple or yellow colour, being disposed in a corymbose cyme. The venation of the leaves is of that peculiar kind which exists in all the Melastomaceæ, and makes a considerable approach to the venation of endogenous plants. So well characterized is the family of the Melastomaceæ, that from the examination of one member of the tribe, we may acquire a precise knowledge of the structure and aspect of the whole tribe. Certain genera shew an approximation to the tribe of Myrtaceæ, and others to the Lythraceæ. The fruit of several is edible, and frequently eaten by children; by which their mouths become blackened, in like manner as we see those of little rustics in our own country, from eating blackberries. Hence the name Melastoma, from the Greek μελας, MELAS, black; and στομα, STOMA, mouth.

Introduction; where grown; Culture. The Maryland Rhexia was originally introduced into this country in 1759, but was lost again till recovered by some of our late botanical collectors. Our drawing was made from a plant which flowered in the greenhouse of the Birmingham Botanical Society, in the month of August. It may, notwithstanding, be considered a frame plant, and will even bear the winter in the open border, when planted in sandy peat, in a favourable situation. Its roots are tuberous, and may be divided in the spring.

Derivation of the Names.

Rhexia, a name used by Pliny, from the Greek ῥῆξις, RHEXIS, a protrusion or swelling, to which some boragineous plant with astringent properties was applied as a cure, and in modern times the name has been bestowed upon this genus, though containing totally different plants.

Synonymes.

Rhexia Mariana. Pluckenet. t. 428, f. 1.

Rhexia Mariana. Nuttall, Genera Americ. I, p. 244.

Rhexia Ludoviciana. Rafinesque Fl. Ludii, p. 92? α, Purpurea, Michaux, Fl. Boreali Amer. I, p. 221. β, Rubella, Michaux, l. c. Bonpland, Rhexia, pl. 47.

Brugmansia sanguinea.

BRUGMAN'SIA SANGUI'NEA.

BLOOD-COLOURED BRUGMANSIA.

EXOGENÆ, OR DICOTYLEDONEÆ.

Natural division to which this Plant belongs

NATURAL ORDER, SOLANACEÆ.

COROLLIFLORÆ, OF DECANDOLLE.

Artificial divisions to which this Plant belongs

PENTANDRIA, MONOGYNIA, OF LINNEUS.

No. 29.

GENUS. Brugmansia. *Persoon.* Calyx tubulosus, ventricosus, 5-angulatus, persistens, apice coarctato 2-3-lobo. Corolla infundibiliformis, 5-plicata, 5-loba; lobis cuspidatis. Stamina 5, inclusa, coarctata. Antheræ conglutinatæ. Stigma crassum, bilobum, margine revolutum. Capsula 2-locularis, lævis, polysperma. Semina reniformia. *David Don.*

SPECIES. Brugmansia sanguinea. *Don.* Foliis sinuato-lobatis, subtomentosis. *Don.*

Character of the Genus, Brugmansia. Calyx tubular, ventricose, 5-angled, persistent, contracted at the apex, which is two or three-lobed. Corolla funnel-shaped, five-plaited, five-lobed; lobes terminating in a long point. Stamens 5, included in the corolla, contracted. Anthers closely approximating. Stigma thick, two-lobed, revolute at the margin. Capsule two-celled, smooth, many-seeded. Seeds kidney-shaped.

Description of the Species, Brugmansia sanguinea. Stem woody, from three to five feet high, (in its native country often twelve feet) simple below, branched above. Branches short, somewhat herbaceous, leafy, clothed with white prominent hairs. Petioles thick, one to three inches long, hairy, nearly round, but slightly flattened above. Leaves alternate, often two springing from near the same point, ovato-oblong, obtuse, waved, sinuate, lobes blunt, both surfaces covered with soft white hairs, upper surface dark green, under paler, presenting numerous reticulations, very prominent veins springing from a thick round midrib, whence proceed lateral branchings; the leaves are from two to nine inches in length, and from one to five

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Reference to the Dissections.

1, The corolla opened, showing the five stamens, and their attachment to the corolla, on a reduced scale. 2, The flower denuded of its corolla and calyx, showing the pistil and ovary of their natural size.

the third had flowers of a fine yellow colour, which, though not so showy, were perhaps more elegant. The seeds were sown in 1832, and the plants, tried both in the conservatory and stove, grew fast, but did not show for flower: one was, in the summer of 1833, plunged in the open border in a pot, and left there by way of experiment. In the winter it died down to the ground; but in the spring sent up four vigorous shoots four feet high, which in September produced many flowers. The first frost of the subsequent winter so much affected it, (although the gardener took every precaution) that, for fear of losing it, he removed it into the house. When he took it up, he found that it had forced a long taproot, above one foot six inches in length, through the pot. Two other plants were planted, without pots, last summer, in the flower borders; and when they showed for flower, were removed into the border of the conservatory, where they flowered well late in the autumn. The plant appears to require more room for its roots than a pot affords; for those only grow luxuriantly and blow which are in the ground. Miss Traill's gardener says he does not think it will stand the winter without protection, as it is nipped by the first frost. He has not yet succeeded with the cuttings he has tried: indeed, it is difficult to obtain them from the plants. The plants in the conservatory which bloomed last autumn are now (March) coming into fine flower; and it is hoped that the time of the year being more favourable, seeds may be obtained from them. The last year the seed-pod formed well, but dropped off before it swelled to any size."

We would call the attention of our readers to a superior method of cultivating the Brugmansia suaveolens, which is, doubtless, applicable to sanguinea. It was published in the Gardener's Magazine, Vol. XII, p. 589, whence we derived it for the Auctarium of the Botanic Garden, section 132.

Derivation of the Names.

Brugmansia, in honour of S. J. Brugmans, Professor of Natural History at Leyden, who first directed attention to the excretions from the roots of plants, by observations on the roots of violets. Sanguinea, from sanguis, blood, in allusion to the colour of the flowers.

Synonymes.

Datura sanguinea. Ruiz and Pavon, Flora Peruviana, Vol. II, p. 15. Kunth in Humboldt and Bonpland. Nova Genera et Species Plantarum, Vol. III, p. 6.

Brugmansia bicolor. Persoon, Synopsis Plantarum, Vol. I, p. 216. Lindley in Botanical Register, t. 1739.

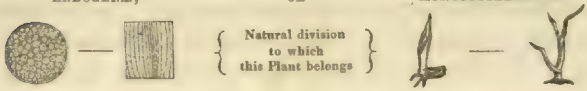
Brugmansia sanguinea. David Don in Sweet's British Flower Garden, t. 272.

Calochortus venustus.

CALOCHORTUS VENUSTUS.

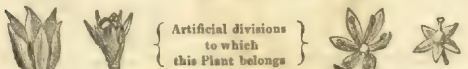
GRACEFUL CALOCHORTUS.

ENDOGENÆ, OR MONOCOTYLEDONEÆ.



NATURAL ORDER, LILIACEÆ.

HYPOGYNOSÆ, OF LINDLEY.



HEXANDRIA, MONOGYNIA, OF LINNEUS.

No. 30.

GENUS. CALOCHORTUS. *PURSH.* CALYX 3-sepalus, herbaceus. PETALA 3, colorata, majora, intus barbata, supra unquem caniculatum pulvinata. OVARIUM superum, 3-loculare, polyspermum. OVULA disticha horizontalia. STIGMATA petaloidea, complicata. CAPSULA apice trivalvis; septicide dehiscens, nunc obtuse trigona oblonga rostrata, nunc triquetra subrotunda. SEMINA plana, serie simplici inserta, testa membranaceâ.

SPECIES. CALOCHORTUS VENUSTUS. *DOUGLASS.* CAULE paucifolio, subbifloro, sepalis erectis, petalis præter fasciculum pilorum glabris basi rubris et versus apicem macula rubra notatis.

CHARACTER OF THE GENUS, CALOCHORTUS. CALYX herbaceous, of three sepals. PETALS 3, coloured, larger than the sepals, bearded within, resting upon a channelled claw. OVARY superior, three-celled, many-seeded, the ovules in two horizontal rows. STIGMATA petaloid, involved. CAPSULE three-valved, at the apex, dehiscing with a septicidal dehiscence, sometimes obtusely three-angled, oblong and beaked, at other times three-cornered and roundish. SEEDS flat, arranged in a single row, testa membranaceous.

DESCRIPTION OF THE SPECIES, CALOCHORTUS VENUSTUS. STEM bulbous, part bearing the flowers long, slender, having towards the middle two lanceolate leaves. FLOWERS, rarely exceeding two, on long peduncles. SEPALS 3, green, lanceolate. PETALS 3, ovato-oblong, white, having towards the base a pencil of hairs, at which part are streaks of deep red on a yellow ground; another red spot is seen nearer the margin of each petal. STAMENS 6. FILAMENTS short. ANTHERS nearly twice as long. OVARY oblong, crowned by three petaloid stigmas.

POPULAR AND GEOGRAPHICAL NOTICE. The present species bears considerable resemblance to Calochortus macrocarpus and Calochortus splendens: from the last it differs by the straight petals marked with a dark spot at their base, while it differs from Calochortus macrocar-

pus by the absence of the green rib on the petals; and from both by the colour of the flower, which is pure white, except where the lower part of each petal is marked in streaks of deep red on a yellow ground, with a spot near the margin, somewhat resembling a spot of blood.

This most pleasing flower was discovered in California, by the late Mr. David Douglas, and by him introduced into the garden of the Horticultural Society of London. It forcibly recalls to mind the lines of Cowper.

> "Not a flower
> But shows some touch in freckle, streak, or stain,
> Of his unrivalled pencil. He inspires
> Their balmy odours, and imparts their hues,
> And bathes their eyes with nectar, and includes,
> In grains as countless as the sea-side sands,
> The forms with which he sprinkles all the earth.
> Happy who walks with Him. Whom what he finds
> Of flavour, or of scent in fruit or flower,
> Or what he views of beautiful or grand
> In nature—from the broad majestic oak
> To the green blade, that twinkles in the sun,—
> Prompts with remembrance of a present God.
> His presence, who made all so fair, perceived,
> Makes all still fairer."

INTRODUCTION; WHERE GROWN; CULTURE. The specimen of this beautiful species of Calochortus from which our drawing was made, grew in the Nursery of Mr. Henderson, of Pineapple Place. It is a most attractive flower, and but little known, having blossomed in this country for the first time in 1833. It usually grows about two feet high, under greenhouse protection. The bulbs will begin to vegetate in December or January, according as they have been kept more or less warm, when they should be planted immediately in pots of light compost, and have greenhouse or other protection for flowering. Or, in May they may be turned into the open borders, where they will flower luxuriantly. The bulbs must be taken up as soon as the stem and leaves are dead, and kept in paper bags, till they again require planting.

DERIVATION OF THE NAMES.

CALOCHORTUS, from Καλὸς, KALOS, beautiful; and Χὸρτος, CHORTOS, grass; referring to the beautiful flowers, which the species with grass-like foliage produce. VENUSTUS, from Venus, alluding to the graceful and charming appearance of the plant when in flower.

SYNONYMES.

CALOCHORTUS VENUSTUS. Transactions of Horticultural Society, Second series, Vol. I, 412. Botanical Register, 1669.

Ipomaea Horsfallia

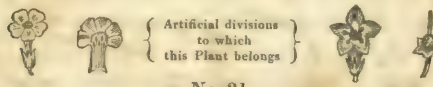
IPOMÆ'A HORSFAL'LIÆ.

MRS. HORSFALL'S IPOMÆA.

EXOGENÆ, OR DICOTYLEDONEÆ.

NATURAL ORDER, CONVOLVULACEÆ.

COROLLIFLORÆ, OF DECANDOLLE.



PENTANDRIA, MONOGYNIA, OF LINNEUS.

No. 31.

GENUS. Ipomæa. *Jacquin.* Calyx 5-partitus, nudus. Corolla campanulata vel infundibiliformis, 5-plicata. Ovarium 2-3-loculare, loculis dispermis. Stylus indivisus. Stigma capitatum, 2-3-lobum. Capsula 2-3-locularis. *Robert Brown.* Prodromus Floræ Novæ Hollandiæ.

SPECIES. Ipomæa Horsfalliæ. *Hooker.* Volubilis glaberrima, foliis quinato-digitatis, foliolis lanceolatis integerrimis margine undulatis, cymis dichotomis, calycis lobis imbricatis obtusis æqualibus, corolla infundibiliformi, stigmate bilobo. Hooker in Botanical Magazine, folio 3315.

Character of the Genus, Ipomæa. Calyx five-parted, naked. Corolla campanulate or funnel-shaped, five-plaited. Ovary two-three-celled, cells two-seeded. Style entire. Stigma capitate, two-three-lobed. Capsule two-three-celled.

Description of the Species, Ipomæa Horsfalliæ. A climbing evergreen; stem, as well as every part of the plant, glabrous. Leaves alternate, petiolate, quinately-digitate. Leaflets generally five, rarely six or seven, lanceolate, entire, somewhat pointed, contracted towards the base, margin slightly undulate. Peduncles axillary, about as long as the petioles, supporting a dichotomous many-flowered cyme. Pedicels club-shaped, smooth. Calyx five-lobed, lobes equal, roundish or ovate, obtuse, dark purple, imbricated. Corolla funnel-shaped, limb short, spreading or reflexed; lobes rounded, emarginate, shining, of a rich rose-colour, of equal depth on external and internal surfaces. Stamens 5, equal, extending beyond the tube; filaments smooth, inserted upon a hairy scale-like gland, which is arched beneath. Ovary globose, surrounded by a large fleshy ring or disk. Stigma capitate, two-lobed, hairy.

Popular and Geographical Notice. It is a subject of doubt with Mr. Horsfall, whether the seeds from which this species was raised in England in 1832, at his seat at Everton, near Liverpool, were re-

Reference to the Dissections.

1, The pistil and ovary, surrounded by its fleshy disk. 2, The corolla opened, exhibiting the stamens, and scale-like glands from which they emanate.

ceived from Africa or the East Indies; its native country is therefore for the present unknown. It is, however, a most acceptable addition to our stove plants, as it produces its rich and elegantly formed blossoms in winter, and partially through the year.

The genera Ipomæa and Convolvulus are so similar, that many unite them into one, but the best botanists keep them separate. In Convolvulus the calyx sometimes has two small bracts, in Ipomæa it is always naked; in Convolvulus the stamens are shorter than the limb of the corolla: ovary is two-, seldom three-celled; and the stigmata are two, filiform, not capitate. This species bears some resemblance to the Ipomæa paniculata of Brown, but is distinguished by its quinately compound leaves; while those of paniculata are simply lobed.

The roots of many species of Convolvulus contain a resin which renders them useful in medicine; and even the Convolvulus arvensis, and the more showy Calystegia sepium, or Hedge-convolvulus, may be employed in the same way as the exotic species. The Ipomæa sensitiva displays great irritability of its corolla; and even the more common sorts exhibit much irritability, and contract when touched. The flowers remain expanded for a very short time; their beauty and perishable nature have "pointed the moral" in the following lines.

"How well the young and fair are here shown forth!
For some—aye, *many*, prize a rosy cheek,
A sparkling eye—or lip where rubies strive
With coral the bright mastery to gain
Above all other wealth. E'en like this flower,
The gay Convolvulus, which spreads her form
Of fragile short-liv'd loveliness before
The flattering beams of the deceitful sun,
And basks her in his light, and thinks, poor bud
Of foolish vanity, that such will last;
But soon the noon-tide glare falls scorchingly
Upon her waning charms—she hangs her head—
Her boasted beauty shrivels and decays,
And outward show, her only gift, is gone!" Miss Twamley.

Introduction; where grown; Culture. Our drawing was made from a specimen grown in the stove of John Willmore, Esq. of Oldford, Staffordshire. Mr. Williams, his gardener, has obligingly informed us, that by taking young cuttings of this plant with a slice of the old wood, accompanied by a perfect leaf, they strike root immediately when placed in a hotbed, in sand, under a bell-glass. Mr. Williams's method has surmounted all difficulty in its propagation.

Derivation of the Names.

Ipomæa, from Ιπος, ipos, the Convolvulus; and Ομοιος, omoios, similar; from its resemblance to the Convolvulus. Horsfalliæ, so called by Sir W. J. Hooker, as a well-merited acknowledgment of the services rendered to botany by Mrs. Horsfall.

Synonymes.

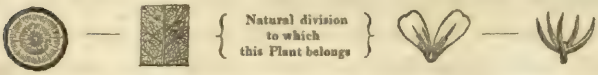
Ipomæa Horsfalliæ. Botanical Magazine, 3315.

Delphinium tenuissimum

DELPHI'NIUM TENUIS'SIMUM.

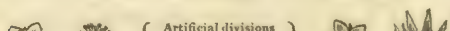
MOST SLENDER DELPHINIUM.

EXOGENÆ, OR DICOTYLEDONEÆ.



NATURAL ORDER, RANUNCULACEÆ.

THALAMIFLORÆ, OF DECANDOLLE.



POLYANDRIA, TRIGYNIA, OF LINNEUS.

No. 32.

GENUS. DELPHINIUM. *TOURNEFORT.* CALYX deciduus petaloideus, irregularis, sepalo nempè superiore in calcar deorsum producto. PETALA 4; 2 superiora basi in appendicibus intrà calcar contentis producta. *DECANDOLLE.* Prodromus Systematis Universalis Regni Vegetabilis, Pars I, p. 51.

SPECIES. DELPHINIUM TENUISSIMUM. *SIBTHORP.* CAULE erecto gracili subramoso, apice subpubescente, pedicellis bracteâ subulatâ multo longioribus. *DECANDOLLE.* Prodromus Systematis Universalis Regni Vegetabilis, Pars I, p. 52.

CHARACTER OF THE GENUS, DELPHINIUM. CALYX deciduous petaloid, irregular, viz. having the upper sepal prolonged downwards so as to form a spur. PETALS 4, of which the two superior are prolonged downwards and lodged in the spur.

DESCRIPTION OF THE SPECIES, DELPHINIUM TENUISSIMUM. Small herbaceous plant, the whole clothed with most delicate pubescence. STEM scarcely a foot high, erect, round, slender, leafy, dividing above into a many-flowered panicle. RADICAL LEAVES with petioles nearly an inch long, lobed, lobes two or three, broad, stem leaves with shorter petioles, three-parted, lobes trifid, subdivided, upper leaves sessile, entire, very narrow. PANICLE spreading, occasionally even compound or branching, very slender. PEDICELS one-flowered, filiform, with bracteolæ at the middle. FLOWERS small, blue or violet-coloured, spur straight, hairy. PETALS elliptico-lanceolate. NECTARY without spots. CAPSULE small, semiovate, crowned with the style, smooth. SEEDS roundish, pale, surrounded with oblong white scales, which are imbricated upwards.

POPULAR AND GEOGRAPHICAL NOTICE. Though this plant is a small annual, with no very showy flowers, it yet possesses an interest from its place of growth, which recommends it to our attention. Its

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REFERENCE TO THE DISSECTIONS.

1, Seed-vessel. 2, The same when opening. 3, Posterior petal with its spur. 4, Stamens. 5, Anterior sepal. 6, Posterior sepal with its spur opened.

native site is Mount Hymettus, near Athens, celebrated alike for its marble and its honey. Both these productions of this locality are frequently alluded to by ancient authors, and the source of the latter is alluded to by a modern writer, whose prose is scarcely less poetic than his verse. "What is Greece at this present moment? It is the country of the heroes from Codrus to Philopœmen, and so it would be, though all the sands of Africa should cover its corn fields and olive gardens, and not a flower were left on Hymettus for a bee to murmur in." Coleridge's Friend, Vol. I, p. 202. For the present state of Hymettus, see Hobhouse's Journey through Albania, Letter XXVI, p. 388.

The seeds of Delphinium staphisagria yield an alcaloid, called Delphinia, which exists in it in the state of a malate of Delphinia, and which is possessed of great virulence. It probably exists in the other species of the genus, not only in the seeds, but probably also in the leaves. It is remarkable that insects do not prey upon the leaves of any species of Delphinium, which may possibly be owing to the fine instinct with which they are endowed, indicating to them the presence of a principle which would be detrimental. The consequence of insects thus abstaining from these plants, is, that the leaves are not disfigured by their ravages, but remain whole till they wither and fall off. This renders them desirable objects of cultivation; but they should be placed out of the reach of children, as the poisonous properties they possess might cause fatal accidents.

Introduction; where grown; Culture. The Delphinium tenuissimum was gathered near Athens by Dr. Sibthorp, and published in the Flora Græca; but not cultivated in England till the year 1836, when seeds were transmitted to several botanical establishments in this country from the Imperial Garden of St. Petersburg. Our drawing was made from a specimen supplied by Mr. Shepherd of the Liverpool Botanic Garden. It perfects seeds in the open ground, and may be raised as other hardy annuals.

Derivation of the Names.

Delphinium, from Δελφὶν, delphin, a dolphin, from a resemblance of the nectary to the imaginary figures of the dolphin. The English name of the genus is Lark-spur, from the spur of the calyx resembling that of the foot of a lark. Tenuissimum, very slender, the superlative of tenuis, slender.

Synonymes.

Delphinium tenuissimum. Sibthorp, Flora Græca, plate 505. Prodromus, Vol. I, p. 370. Decandolle, Systema Naturale Regni Vegetabilis, Vol. I, p. 345. Decandolle, Prodromus Systematis Universalis Regni Vegetabilis, Pars I, p. 52. Don in Sweet's British Flower Garden, folio 366.

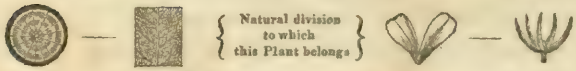
Delphinium divaricatum. Ledebour in Fischer et Meyer Ind. Sem. Hort. Imper. Petrop. 1835.

Gilia coronopifolia.

GILIA CORONOPIFOLIA.

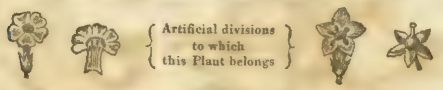
RAVEN-FOOTED GILIA.

EXOGENÆ, OR DICOTYLEDONEÆ.



NATURAL ORDER, POLEMONIACEÆ.

COROLLIFLORÆ, OF DECANDOLLE.



PENTANDRIA, MONOGYNIA, OF LINNEUS.

No. 33.

GENUS. Gilia. *Cavanilles.* Calyx campanulatus, 5-fidus, margine et sinubus membranaceis. Corolla infundibuliformis vel subcampanulata, limbo 5-partito, laciniis obovatis integris. Stamina ad faucem vel vix intra tubum inserta. Antheræ ovato-subrotundæ. Capsulæ loculi polyspermi. Bentham in Botanical Register, folio, 1622.

SPECIES. Gilia coronopifolia. *Persoon.* Caulibus strictis paniculatis glanduloso-pubescentibus, foliis pectinatim pinnatis laciniis filiformibus apice setaceis, corollis elongatis tubulosis limbi laciniis oblongis acutis.

Character of the Genus Gilia. Calyx campanulate, 5-cleft, margin and indentations membranous. Corolla funnel-shaped or subcampanulate, limb 5-parted, segments obovate, entire. Stamens inserted at the throat, or scarcely within the tube. Anthers ovate or roundish. Cells of the capsule many-seeded.

Description of the Species, Gilia Coronopifolia. Root fibrous. Stem simple, about 3 or 5 feet high. Radical Leaves crowded, dark green, somewhat fleshy, pectinate, sparingly clothed with hairs, which are most numerous along the midrib or rachis; the upper leaves undivided: the hairs on the stem glandulose. Flowers panicled, aggregated, nodding; calyx with glandulose hairs, oblongo-campanulate, generally 5-cleft, segments erect, awl-shaped. Corolla reddish, or brick-coloured, funnel-shaped, tube nearly an inch in length, limb 5-cleft, segments blunt, spreading or reflexed, the upper surface beautifully spotted, throat whitish. Stamens 5, of unequal length, scarcely longer than the tube of the corolla. Ovary oblong, obtuse, 3-furrowed. Style nearly 3 times as long as the ovary, erect. Stigma 3-parted, each segment linear, spreading and recurved. Fruit a capsule shorter than the calyx, ovate, obtuse, convexly 3-angled,

Reference to the Dissections.

9 1, Corolla laid open. 2, The pistillum.

crowned by a portion of the style. SEEDS in each cell few, in a double row, somewhat oblong or cubical, angles slightly prominent.

POPULAR AND GEOGRAPHICAL NOTICE. For the introduction of this plant we are indebted to Mr. Douglas, who discovered it on the North-west side of America. We may imagine the rapture experienced by this intrepid explorer, when rewarded for his toils by fortuitously meeting with such an elegant production. Even here we cannot forbear adopting the language of the accomplished authoress of "The Romance of Nature" and exclaiming,

> Oh! to behold ye in your native homes,
> Ye strange and glorious creations! There
> Springing 'mong giant trees, whose soaring tops,
> Are roofed by the o'erarching sky, ye grow,
> And bloom, and flourish in uncultured pride,
> Gorgeously beautiful. I close mine eyes,
> And fancy paints a wilderness of wealth,
> In those scarce trodden wilds, and forests vast,
> And sunny prairies of the western world,
> Where birds on wings of every glittering dye,
> Flit in gay freedom, through their forest homes,
> And insects sparkling in the sunlight, fill
> The solitude with nature's eloquence."

INTRODUCTION; WHERE GROWN; CULTURE. Introduced in 1827, into the Garden of the London Horticultural Society, where, from a finely grown plant, our drawing was taken in the month of July. Though in its native country it is a perennial, with us it is seldom more than biennial. It should be sown in the autumn, and the young seedlings transplanted into small pots, and protected, during winter, in a cold frame; or, which is preferable, near the glass in an airy greenhouse. In spring they should be repotted as frequently as the roots become matted within the pots, using plenty of drainers, and a fresh loamy soil. If planted in the borders it should have a shady situation, but it rarely flourishes under full exposure.

DERIVATION OF THE NAMES.

GILIA, in honour of Dr. Gil, a Spanish physician. CORONOPIFOLIA from CORONOPUS, a genus of cruciferous plants, and FOLIUM a leaf.

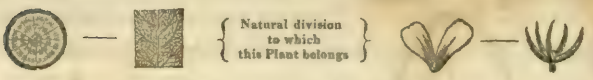
SYNONYMES.

CANTUA CORONOPIFOLIA. Willdenow. Species Plantarum, Vol. I, p. 879.
GILIA CORONOPIFOLIA. Persoon Synopsis Plantarum, Vol. I. p. 137. Don in Sweet's British Flower Garden, 289.

MENTZE'LIA STIPITA'TA.

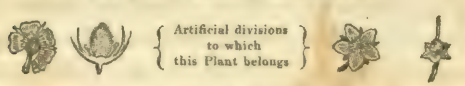
STALKED MENTZELIA.

EXOGENÆ, OR DICOTYLEDONEÆ.



NATURAL ORDER, LOASACEÆ.

CALYCIFLORÆ, OF DECANDOLLE.



POLYANDRIA, MONOGYNIA, OF LINNEUS.

No. 34.

GENUS. MENTZELIA. *PLUMIER.* CALYX persistens, tubo cylindraceo sub-5-sulcato, lobis 5 lanceolatis subulatisve æqualibus. PETALA 5 summo calycis tubo inserta æqualia. STAMINA plurima petalorum numero multiplicia cum iis inserta, filamentis sæpe in phalanges dispositis antheris erectis ovatis bilocularibus. OVARIUM calycino tubo adnatum. STYLI 3 ad medium aut ad apicem in unicum striis tribus notatum connexi. CAPSULA turbinato-cylindracea, calycinis lobis coronata, 1-locularis, apice 3-valvis. SEMINA 3-6-9 aut abortu ab iis numeris subdiscrepantia, placentis 3 parietalibus inserta. *DECANDOLLE*, Prodromus Systematis Naturalis Regni Vegetabilis, Pars. III, p. 343.

SPECIES. MENTZELIA STIPITATA. *DECANDOLLE.* PETALIS obovatis mucronato-cuspidatis calyce paulò longioribus, staminibus 30-40, floribus foliisque stipitatis. Decandolle Prodromus Universalis Regni Vegetabilis, III, 343.

CHARACTER OF THE GENUS, MENTZELIA. CALYX persistent, tube cylindrical, generally 5-furrowed, lobes lanceolate or awl-shaped, equal. PETALS 5, equal, adherent to the tube of the calyx to near the throat, then free. STAMENS numerous, but still some multiple of the petals, to which at the point of origin they adhere, but the filaments are free, and generally disposed in parcels, anthers erect, ovate, two-celled. OVARY adherent to the tube of the calyx. STYLES 3 united into a solid column as high as the middle or even the entire length, and marked by 3 lines. CAPSULE turbinate or cylindrical, crowned by the lobes of the calyx, 1-celled, splitting into 3 valves at the apex. SEEDS 3-6-9, but frequently varying from these numbers from abortion, attached to 3 parietal placentæ.

DESCRIPTION OF THE SPECIES, MENTZELIA STIPITATA. PLANT herbaceous, but disposed to become woody, dichotomously branched, whole surface rough with stiff hairs, hairs glandular at the apex, secreting a viscid fluid. LEAVES alternate, exstipulate, petiolate, somewhat

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REFERENCE TO THE DISSECTIONS.

1, A petal. 2, one of the outer row of stamens. 3, ovary with calycine segments, inner stamens and style. 4, fruit. 5, section of ditto, with seeds.

lobed, or angular, pointed at the top with large unequal teeth, both surfaces hairy, upper surface deep green, under lighter. FLOWERS large, orange-yellow, solitary. PEDUNCLES springing at a distance above the axils of the leaves. TUBE OF THE CALYX cylindrical inclosing the ovary, lobes 5, awl-shaped or lanceolate. PETALS 5 attached to the interior of the calycine tube, limb free, obovate, mucronate, longer than the segments of the calyx. STAMENS 30-40, of which the 10 exterior are longer than the rest, and curved towards the pistillum, the others deflected all towards one side of the pistil. OVARY concealed in the tube of the calyx to which it adheres. STYLE simple, subulate, stigma pointed. SEEDS 3, enclosed in a transparent jelly which fills the seed-vessel.

POPULAR AND GEOGRAPHICAL NOTICE. The present species of Mentzelia is a native of Mexico, whence it was sent by Mr. Bates. The flowers of all the species hitherto known are orange-coloured, and only expand when exposed to strong direct solar light, and continue in bloom only a few hours, but follow each other in rapid succession. They are devoid of perfume. The hairs of many species of Loasa, and of Blumenbachia insignis, secrete a pungent juice, much more potent than that of the nettle, and as it is probable that this property is possessed by the hairs of some Mentzelias, it is prudent to avoid touching them carelessly.

INTRODUCTION; WHERE GROWN; CULTURE. Introduced by William Bates, Esq. into the Liverpool Botanic Garden, where it flowered in the Green-house in October, 1836. It may be propagated by cuttings, in sand, under a hand-glass, or raised from seeds. A mixture of sandy loam and peat seems to suit it best.

DERIVATION OF THE NAMES.

MENTZELIA, in honour of Christian Mentzel, a Prussian, who was Physician to the Elector of Brandenburg, and died in 1701. He was a celebrated oriental scholar, as well as botanist. He published Lexicon plantarum polyglotton universale; Icones Arborum fructicum et herbarum, and left in Manuscript, Botanica Japonica, 2 vols. in folio. STIPITATA, stalked from stipes, the leaves and flowers having stalks in this species, while in the others they are nearly sessile.

SYNONYMES.

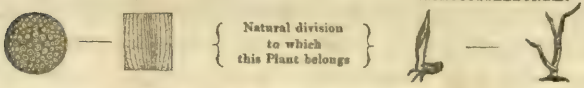
MENTZELIA STIPITATA. Decandolle Prodromus Systematis Universalis Regni Vegetabilis, Pars, III, p. 343. G. Don. System of Gardening and Botany, Vol. III, p. 66.

Brodiæa grandiflora

BRO'DIÆA GRAN'DIFLORA.

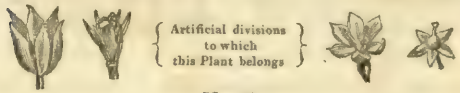
LARGE-FLOWERED BRODIÆA.

ENDOGENÆ, OR MONOCOTYLEDONEÆ.



NATURAL ORDER, LILIACEÆ.

HYPOGYNOSÆ, OF LINDLEY.



TRIANDRIA, MONOGYNIA, OF LINNEUS.

No. 35.

GENUS. Brodiæa. *Smith.* Perianthium corollinum, campanulatum, angulatum limbo sex-fido. Stamina 6, perianthii fauci imposita, 3 fertilia, filamentis brevissimis planis; 3 sterilia, squamæformia, limbi lobis exterioribus opposita. Discus hypogynus, carnosus, trilobus. Ovarium breviter pedicellatum triloculare. Ovula plurima. Stylus terminalis, ovario continuus; Stigma trilobum. Capsula pedicellata, perianthio cincta, trilocularis, loculicido-trivalvis. Semina in loculis 4-5-obovata. Embryo orthotropus, in axe albuminis carnosi. Endlicher. Genera Plantarum, p. 142.

SPECIES. Brodiæa. grandiflora. *Smith.* Pedunculis umbellatis bracteis longe excedentibus, squamis lanceolatis obtusissimis integris.

Character of the Genus, Brodiæa. Perianth resembling a corolla, (from the external sepals being of the same colour as the internal), campanulate, angular, limb six-cleft. Stamens 6, attached to the throat of the perianth; 3 fertile, with very short flat filaments; 3 sterile, scale-like, attached opposite to the external lobes of the limb. Disk hypogynous, fleshy, three-lobed. Ovary resting on a short pedicel, 3-celled. Ovules numerous. Style terminal, continuous with the ovary. Stigma 3-lobed. Capsule pedicellate, surrounded by the perianth, 3-celled, splitting with a loculicidal dehiscence into 3 valves. Seeds in each cell 4-5, obovate, compressed, with a black membranaceous testa. Embryo orthotropous in the axis of a fleshy albumen.

Description of the Species, Brodiæa grandiflora. Stem bulbous, small, round, solid, externally wrinkled. Outer leaves scale-like, membranous, forming a sheath around the bases of the inner leaves, which are few, long, linear, acuminate, channeled on the internal surface. Scape, or flower-stem equal in length to the

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Reference to the Dissections.

1, Transverse section of the seed vessel. 2, Perianth opened, showing the attachment of the fertile and sterile stamens. 3, Ovary and style.

leaves, erect, round, terminating in a bracteated, few-flowered umbel of handsome blue flowers. Bracts small, early becoming membranous and withered. Pedicels of the outer flowers of the umbel about an inch and half long, those of the central flowers shorter. Perianth tubular below, and green as long as it continues adherent to the ovary, angular, owing to six elevated brown lines, upper part forming a limb of six spreading, lanceolate segments, of a blue or purplish colour. The throat or faux exhibits three stamens, with oblong, yellow anthers, which dehisce by a line the entire length of their sides, filaments winged and short; alternating with these, and attached to the three external segments of the limb, are three abortive stamens, in the form of 3 lanceolate or oblong scales, which are white, and somewhat fleshy. Pollen oblong, diaphanous. Ovary obovate, attenuated at the base into a pedicel, three-lobed above. Style filiform, as long as the stamens, white. Stigma 3-cleft.

Popular and Geographical Notice. This truly elegant plant was first discovered by Mr. Menzies, the companion of Vancouver, in New Georgia, on the North-west coast of America, in 1792; from whose dried specimens Sir James E. Smith drew up his description, and on which he founded the genus. It has subsequently been found by Dr. Scouler and Mr. Douglas, at Puget, Fort Vancouver, and throughout the dry plains west of the Rocky Mountains.

Introduction; where grown; Culture. Introduced by bulbs, sent by Mr. Douglas to the Garden of the Horticultural Society, in 1826 ? The plant from which our drawing was derived flowered in the nursery of the Messrs. Pope of Handsworth, in the month of July. It prospers when planted in a shady border, in peat soil; and may be increased by offsets and seeds.

Derivation of the Names.

Brodiæa, so called by Smith, after James Brodie, Esq. of Brodie, North Britain. Grandiflora, large-flowered, from grandis, and flos, from the size of the flowers of this species, compared with Brodiæa congesta.

Synonymes.

Brodiæa grandiflora. Smith. Transactions of Linnean Society. Vol. 10. p. 2, t. 1.—Botanical Register, t. 1183.—Botanical Magazine, folio 2877.

Brodiæa coronaria. Salisbury. Paradisus Londinensis, t. 98.

This plant is not the Brodiæa grandiflora of Pursh, nor of Nuttall, which is a Millea.

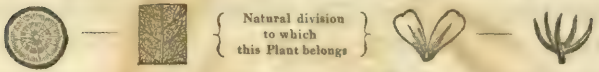
Gesnera lateritea

Mrs Withers del

GESNE'RA LATERI'TIA.

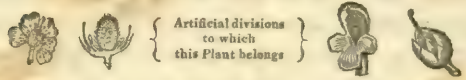
BRICK-COLOURED GESNERA.

EXOGENÆ, OR DICOTYLEDONEÆ.



NATURAL ORDER, GESNERACEÆ.

CALYCIFLORÆ, OF DECANDOLLE.



DIDYNAMIA, ANGIOSPERMIA, OF LINNEUS.

No. 36.

GENUS. GESNERA. *LINNEUS.* CALYX ovario adnatus; limbo libero, 5-partito. COROLLA tubulosa, superne ampliata; limbo bilabiato; labio superiore emarginato-bilobo, inferiore trifido. STAMINA 4, didynama. STIGMA bilobum. CAPSULA calyce vestita, unilocularis bivalvis; placentis parietalibus duabus, oppositis, bilamellatis. *HUMBOLDT, BONPLAND, ET KUNTH.* Nova Genera et Species Plantarum, Vol. III, p. 315.

SPECIES. GESNERA LATERITIA. *LINDLEY.* HERBACEA, foliis subrotundo-ovatis cordatis rugosis crenatis hirsutis, floribus axillaribus solitariis terminalibusque geminatis, bracteis sessilibus amplexicaulibus planis, corollis tomentosis, labio superiore oblongo concavo bilobo, inferiore truncato. *LINDLEY.* In Botanical Register, folio 1950.

CHARACTER OF THE GENUS, GESNERA. CALYX attached to the ovarium; limb free, five-parted. COROLLA tubular, widened towards the upper part; limb two-lipped, upper lip emarginately two-lobed, lower lip three-cleft. STAMENS 4, didynamous. STIGMA two-lobed. CAPSULE covered by the calyx, one-celled, two-valved; placentæ 2, parietal, opposite, consisting each of two plates, or lamellæ.

DESCRIPTION OF THE SPECIES, GESNERA LATERITIA. A herbaceous plant with an erect simple stem, which like every part of the plant is clothed with hairs. LEAVES opposite, roundedly or ovately-cordate, crenate or toothed, rugose, hairy, veins very conspicuous on both surfaces. PEDUNCLES axillary, or terminal, the lower ones solitary, the upper ones geminate, the bracts sessile, amplexicaul, plane; pedicels reddish. CALYX ovate, 5-toothed, teeth lanceolate acute. COROLLA woolly, of a brick-red colour, about an inch long, nearly cylindrical, but contracted at the base, divided into an upper and under lip, upper lip oblong, concave, of equal width at the base as at the apex, two-lobed, over-hanging the mouth of the corolla, lower lip obscurely three lobed, truncated. STAMENS 4, didynamous adhering at the base to the tube of the corolla, at the upper part free, and protruding beyond

the lower lip, but not equalling the upper lip. OVARY conical. STYLE as long or nearly so as the stamens. STIGMA 2-lobed.

POPULAR AND GEOGRAPHICAL NOTICE. This plant is a native of Brazil, whence it was received by the Horticultural Society. It was, till lately, considered to be Gesnera Sellowii of Martius, a mistake discovered by Dr. Lindley, who has bestowed upon it the name it must in future bear. It does not even belong to the same section of the species as Gesnera Sellowii, but belongs to the group of which Gesnera bulbosa is the type It is very nearly allied to Gesnera faucialis, from which however, it differs in the leaves being more round, while the flowers are smaller. It attains the height of two feet.

INTRODUCTION; WHERE GROWN; CULTURE. Introduced about 1832, by the London Horticultural Society. This, as well as several other species of Gesnera, the whole of which are stove plants, have tuberous roots, by which they may be easily increased. The best time for dividing these is when they have begun to vegetate; for if division be performed earlier they will sometimes perish, particularly if kept too moist, whilst in a dormant state. Another method of increase is by cuttings. When the young shoots are two or three inches high, they may be taken off with a heel of the fleshy tuber, and they will make root quickly, and become fine flowering plants in the same season.

DERIVATION OF THE NAMES.

GESNERIA or (as it ought to be) GESNERA, in honour of Conrad Gesner, one of the fathers of modern natural history, born at Zurich in 1516, died 1565. LATERITIA, from later, a brick, or tile, in reference to the colour of the flowers.

SYNONYMES.

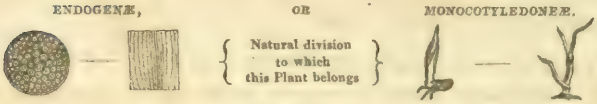
GESNERA LATERITIA. Lindley in Botanical Register, folio 1950.

Dendrobium moschatum.

DENDRO'BIUM MOSCHA'TUM.

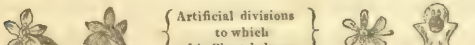
MUSK-SCENTED DENDROBIUM.

ENDOGENÆ, OR MONOCOTYLEDONEÆ.



NATURAL ORDER, ORCHIDACEÆ.

GYNANDROSÆ, OF LINDLEY.



GYNANDRIA, MONANDRIA, OF LINNÆUS.

No. 37.

GENUS. DENDROBIUM. See No. 5.

SPECIES. DENDROBIUM MOSCHATUM. *WALLICH.* Caulibus teretibus, foliis elliptico-oblongis obtusis, racemis lateralibus laxis 5-6-floris, bracteis brevibus oblongis obtusis, sepalis oblongis retusis latioribus obsolete tessellatis, labello unguiculato cochleariformi obtusissimo extus villoso.

DESCRIPTION OF THE SPECIES, DENDROBIUM MOSCHATUM. ROOTS numerous, attached to branches of trees, consisting of simple waved and stout fleshy fibres. STEM of the thickness of the little finger, ascending from a span to a foot or more in length, cylindrical, jointed, striated, having towards the top alternate distichous, spreading, vaginating, lanceolate, entire, obtuse, shining leaves; from the lower part of the stem springs the raceme, bearing 5 large, handsome, tawny orange or buff-coloured flowers. PEDUNCLE 6-8 inches long, jointed, with several sheathing scales at the base. BRACTS, striated, at the base of each pedicel, short, oblong, obtuse. FLOWERS when fully expanded, which they are only when the sun shines upon them, from $2\frac{1}{2}$ to 3 inches wide. SEPALS oblong obtuse spreading, prolonged at the base; petals oblong retuse, broader than the sepals; both sepals and petals obscurely tesselated. LIP erect, jointed upon the prolonged base of the column, and doubled upon it, large, extremely ventricose, resembling a Cypripedium, of a deeper colour than the sepals or petals, hairy without, inner surface darker than the outer, marked on each side with a blood-red spot. COLUMN very short, of a pale colour, except at the margin which is red, greater part of its length united with the perianth, much prolonged down the front of the ovary. FILAMENT of the stamen very short; anther deep purple, attached by a filamentous process to the top of the column, 2-celled, each cell having a dissepiment, and containing two double pollen-masses, of an oblong shape approxima-

ting and forming 2 pairs. Ovary very long, round, scarcely twisted, slightly thickened upwards, Style none. Stigma a viscid concave disc, situated immediately below the anther, with a stigmatic canal, which extends to the ovary.

Popular and Geographical Notice. Few more interesting species of orchidaceous plants have come under our consideration, than that which we have just described. Yet it is by no means a newly-discovered plant, for besides being known to Dr. Wallich, who described it under the name of Dendrobium Calceolus, from Dr. Carey's Garden, in India, it was found in the progress of Symes's interesting Embassy to Ava, in 1795, and described by Dr. Hamilton (now Buchannan) in Symes's Narrative, 4to Edit. London, 1800, p. 478, from which we learn that the Birmese name is Thee-kna-nec. It would appear to have a considerable geographical range, for it occurs at Rangoon in Gosuingstham in Nepaul, and at Pegu. Neither is the superb character of the flowers their only recommendation, for they diffuse a faint odor, resembling musk; a conjunction of properties which never fails to attract us most forcibly towards their possessors.

Notwithstanding the different colour of the flowers, and the narrow leaves of the plant, which Dr. Hooker describes in Exotic Flora, plate 184, under the designation of Dendrobium Calceolaria, we agree with Dr. Lindley in his conjecture that it is the same as Dendrobium moschatum.

Introduction; where grown; Culture. This plant was sent, some years ago, by Dr. Wallich, from Calcutta, to the Liverpool Botanic Garden. To this extensive and well-conducted establishment, we are indebted for the opportunity of figuring it, in which we have been admirably assisted by the experienced pencil of Miss Nicholson of Liverpool. It flowered in June of the present year, 1837.

Derivation of the Names.

Dendrobium from Δενδρον a tree, and Βιος life, from living upon trees. Moschatum from Moschus, musk: but Dr. Wallich says the smell resembles Rhubarb.

Synonymes.

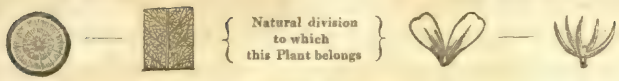
Epidendrum moschatum. Hamilton in Symes's Embassy to Ava, 4to p. 478.
Dendrobium calceolaria. Hooker in Exotic Flora, 184.
Dendrobium moschatum. Lindley, Genera and Species of Orchidaceous Plants, p. 82. Don Prodromus Floræ Nepalensis, p. 34.

Ribes speciosum

RI'BES SPECIO'SUM.

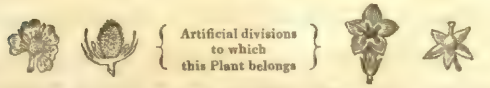
SHOWY GOOSEBERRY.

EXOGENÆ, OR DICOTYLEDONEÆ.



NATURAL ORDER, GROSSULACEÆ.

CALYCIFLORÆ, OF DECANDOLLE.



PENTANDRIA, MONOGYNIA, OF LINNEUS.

No. 38.

GENUS. Ribes. *Linnæus.* Calyx 5-lobus, laciniis plus minus coloratis. Petala 5 parva albida lutea vel rubra. Stamina 5 rarissime 6, filamentis liberis. Styli 1-2-3-4-fida. Bacca unilocularis, receptaculis lateralibus. Semina arillata oblonga subcompressa. *Decandolle.*

SPECIES. Ribes speciosum. *Pursh.* Subgemmis 3-plicato-aculeatum. Foliis cuneato-sub-rotundis inciso-crenatis glabris nervosis. Petiolis brevibus. Pedunculis subtrifloris folio longioribus, pedicellis germinibusque glanduloso-pilosis. *Decandolle.* Ibid, p. 478.

Character of the Genus, Ribes. Calyx five-lobed, segments more or less coloured. Petals five, small, whitish, yellow, or red. Stamens 5 seldom 6, filaments free Styles 1-2-3 or 4-cleft. Berry one-celled, receptacles lateral. Seeds generally furnished with an arillus oblong, somewhat compressed.

Description of the Species, Ribes speciosum. Shrub about four or five feet high, branched, branches alternate, surface covered with glandular hairs. Thorns three, placed under each bud. Leaves alternate, fasciculated, petiolate, wedge-shaped, lobed, smooth veined, light green above, greyish green below. Flower-stalks axillary two or three-flowered, longer than the petioles. Flowers pedicellate, bracteate; the pedicels and ovaries covered with glandular hairs. Calyx tubular, coloured. Petals 5, small. Stamens 4-5, greatly exceeding the calyx in length. Filaments slender, red. Anthers two-celled. Style long, slender, shorter than the stamens, stigma two-cleft. Fruit a berry, one-celled.

Popular and Geographical Notice. Every one who has seen this very beautiful species of gooseberry is struck with the apparent

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Reference to the Dissections.

1, Stamens wholly shown, by the removal of the calyx and corolla. 2, Petals disclosed, by the removal of the calyx. 3, Pistil.

similarity of its flowers to that of several species of Fuschia, which has led some botanists to insist upon an affinity between the Currant tribe and Evening-primrose tribe, to which the genus Fuschia belongs. The closeness of this affinity is questioned by others, (see Lindley's Natural System of Botany, 2nd Ed. p. 240.) The genus Ribes cannot be confounded with the genus Fuschia, as the flower of the former has 5 stamens, of the latter 8. This species is a native of the West coast of North America, in North California and Montery; apparently also of Mexico.

INTRODUCTION; WHERE GROWN; CULTURE. This species was first raised in England from seeds sent by Mr. Collie, at Montery, in 1828, to the garden of that zealous patron of botany and horticulture, A. B. Lambert, Esq. of Boynton House, Wiltshire, where it flowered in 1831. Our drawing was made at the Nursery of the Messrs. Pope of Handsworth, from a standard plant in the open ground, where its gracefully pendent branches, decked with innumerable flowers, as with glittering rubies, shone brilliantly in the sunny rays of May and June. It is certainly one amongst the most showy of small flowering shrubs, and is admirably adapted for training against a wall or trellis, where it will attain the height of six or eight feet. Although of deciduous character, it has in some degree the advantage of an evergreen, on account of the perpetual growth of small leaves from almost every bud along its slender branches, which afterwards contrast prettily with its crimson flowers. Nor is the growth of these suspended even in winter, but by their continual expansion gladden and refresh our eyes with the pleasing verdure of Spring, in the midst of the wintry chills of December and January. It is very readily propagated by cuttings. We do not know whether any culinary use can be made of the berries, which may possibly ripen well in the more southern parts of this country.

DERIVATION OF THE NAMES.

Ribes is of Arabian origin, being a name applied to a species of rhubarb, now known under the name Rheum Ribes (Linneus,) but which Tragus thought was applied to a species of gooseberry. Speciosum shewy, from its attractive appearance.

SYNONYMES.

RIBES SPECIOSUM. Pursh. Flora Americana Septentrionalis Vol. II, appendix, p. 731. D. Don in Sweet's British Flower Garden, t. 149. Decandolle. Prodromus Systematis Universalis Regni vegetabilis, pars III, p. 478. Sprengel Systema Vegetabilium, Vol. I. p, 812. Botanical Register, Vol. 18, t. 1557. Botanical Magazine, 3530.

RIBES STAMINEUM. Smith in Ree's Cyclopædia, under Ribes.

RIBES FUSCHIOIDES. Berlandier Memoires de la Societe physique de Geneve. Vol. III, part 2, p. 43.

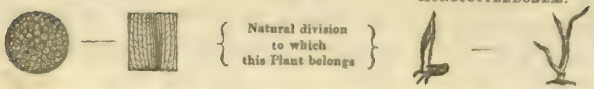
Crinum Capense.

Mille del

CRI'NUM CAPEN'SE.

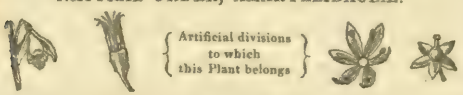
CAPE OF GOOD HOPE CRINUM.

ENDOGENÆ, OR MONOCOTYLEDONEÆ.



NATURAL ORDER, AMARYLLIDACEÆ.

EPIGYNOSÆ, OF LINDLEY.



HEXANDRIA, MONOGYNIA, OF LINNEUS.

No. 39.

GENUS. CRINUM. *LINNEUS.* GERMEN medio crassius; tubus cylindricus germine gracilior; filamenta vix extra tubum pariter inserta recurvata, antheræ incumbentes; pericarpium molle evalve exsulcum, dissepimentis obsoletis; semina difformia. (Folia basi tubulosa) *HERBERT* Amaryllidaceæ. p, 78.

SPECIES. CRINUM CAPENSE. *HERBERT.* FOLIIS lato-lanceolatis margine scabris loriformibus, pedicellis brevissimis, tubo corollæ elongato, limbo campanulato stamina subascendentia superante. *SPRENGEL* Species Plantarum II. p. 52.

CHARACTER OF THE GENUS, CRINUM. GERMEN thickest in the middle. TUBE cylindrical, more slender than the germen. FILAMENTS inserted just outside the tube, more or less recurved. ANTHERS incumbent. STIGMA 3-cornered or trifid. CAPSULE soft, deformed, without valves or furrows. DISSEPIMENTS obsolete. SEEDS very irregular in form, size, and number. (Leaves properly tubular at the base.)

DESCRIPTION OF THE SPECIES, CRINUM CAPENSE. STEM bulbous, external leaves scarious, internal long, broad and convolute at the base, thong-like, lanceolate, rough at the margins, laxly reclined at the upper part, glaucous on both surfaces. SUPERIOR LEAVES upright, channelled their whole length, very narrow. SCAPE about two feet long, straight, roundish or slightly compressed. UMBEL few or many-flowered. SPATHA two-leaved, lanceolate. PEDICELS short. OVARY globose elliptical, devoid of furrows, smooth. PERIANTH white, segments tinged with red on the outside. TUBE angular or roundish furrowed, twice as short as the limb, recurvedly funnel-shaped, segments elliptico-lanceolate, with a short claw; inner segments broadest. FILAMENTS of the stamens at first dependant but near the middle reflexed and ascending, unequal in length. STYLE as long as the segments of the

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REFERENCE TO THE DISSECTIONS.

1, Ovarium cut through, transversely, shewing its three cells.

perianth. Stigma small, orbiculate, open, slightly hairy. Seeds from 20 to 50.

Popular and Geographical Notice. The genus Crinum, which, in the recent revision of the tribe of Amaryllidaceæ, by Mr. Herbert, is stated to consist of about 46 known species, is spread round the whole belt of the globe, within the tropics, and within a certain distance from them, p. 348 : many are found in the East and West Indies, while a considerable number are native of the Cape of Good Hope, of whose botany bulbous plants form a characteristic feature. The species of the genus Crinum do not possess in any great degree the acrid or poisonous properties of the tribe to which it belongs; nevertheless Crinum Asiaticum is poisonous to dogs, and Zeylanicum may be substituted for the Scilla maritima, as it possesses analagous properties.

The species of this genus lend themselves with more or less facility to the formation of hybrids, many of which are more shewy, and at the same time more hardy, than the natural species. Respecting those already procured, or which are likely to be procured, much interesting information may be found in the late publication of the Hon. and Rev. W. Herbert, who has paid great attention to this subject for many years.

Introduction; where grown; Culture. This plant must have been introduced into this country about the middle of the last century. We have been anxious to introduce this Crinum and some other Amaryllidaceæ, to our readers, on account of their beauty and the very little care which they require at the hand of the cultivator. The original of our present engraving was produced by a plant which was presented to us at least seven years ago, and has lived through all vicissitudes, under neglect, and we may add, ingratitude, still flowering, and still healthy. It reminds us of humility, as described by a female writer. "It endures every thing, and its endurance is silent. It never thinks itself worthy of a recompense, therefore it asks for none." This is an estimable quality in handsome plants, for it must be confessed that some demand more attention than their good qualities can ever repay. During winter our plant has never had further indulgence than the shelter of a cold frame, or a shed, and not always so much as this. In summer it has generally been placed beside a small fountain, where the pot which contains it, usually stands in water, an inch deep. During one summer the pot and plant was entirely submersed in water; and even then, it flowered, but not luxuriantly. In addition

to our own experience, we shall give that of Mr. Herbert, who says, "It is a very hardy species, endures the winter, and flowers in profuse succession during 5 or 6 months, in a bed covered with leaves, and with me it ripens seed by the bushel. It delights in wet, and will flower in a pond, but its fibres are rather disposed to rot in the water of a cold pond in the winter. In a warm situation it may remain always in water. I do not know that its fibres would rot if it was growing in the soil under the pond. It might be advantageously placed by the edge of any ornamental piece of water, and would form a beautiful clothing for a small island, where it would afford thick covert for water fowl. Nursery gardeners might easily rear it from seed to sell by the hundred. A covering of leaves is not necessary to it, and its own dead foliage would give it a good deal of protection. I have had the neck of a bulb, which was left in a pot standing in a small pond, clasped tight by ice two inches thick for a fortnight, without its receiving any injury." Amaryllidaceæ, 270. "The seed of the tropical species of Crinum will often lie for a very long time without vegetating. It may be made to grow immediately, by cutting off carefully, a portion of the fleshy mass, so as to expose the point of the embryo, after which the seed should be set edgeways in a small pot of earth, just covering the radicle. The operation requires however a cautious hand; for if the point is cut by the knife, the vitality of the seed is destroyed, and its direction is uncertain, though more likely to bend towards the hilum or scar than elsewhere. Small bits of the flesh should therefore be pulled off with the point of a knife rather than cut, till the embryo is discovered." Ibid, p. 402. "All the hybrid Crinums raised between Capense and tropical species, which are now very numerous, are hardy enough to stand out of doors against the front wall of a stove; where, if a mat is thrown over them in sharp frosts, they preserve much of their leaves through the winter, and from May to November continue throwing up a succession of flower-stems in great perfection. Crinum scabro-Capense bears the most beautiful flower; Crinum pedunculato-Capense is of the largest stature." Ibid, p. 356.

Flued Borders. "The vigour with which mules of the genus Crinum, and many other plants, grew out of doors against the front wall of a stove, persuades me that a great variety of plants might with a little care be cultivated better in the open ground than under glass, if the border in which they are to grow were flued under ground, and a

tarpauling, or any water-proof covering, placed over them at the time when it might be requisite to exclude either rain or cold. The covering might hang on the two sides of a strong longitudinal pole, like the two slopes of a roof, and be made to roll up either with or without a spring. There are many plants which seem to enjoy a cool atmosphere, but will not flower or thrive vigourously without the stimulus of heated earth at the root. Having chosen a situation where a furnace and boiler could be placed under ground, I would carry the smoke-flue as far as its heat would extend on one side, and hot-water or steam-pipes in a different direction, as might be found convenient, enclosed in a stone or brick flue, to as great a length as its influence might reach. In such a border I believe the genus Hedychium and many others, would flower perfectly, with the assistance of fire in summer, requiring nothing in winter but a covering to throw off the wet; and the heat might be turned into other pipes for the advantage of plants which might require the warmth in winter rather than in summer. If in front of a wall, a moveable verandah, which might be either ornamental or made of thatched hurdles or hurdle-gates, would throw off the wet, which is the principal cause of injury in winter; for many plants will endure the access of severe frost to the head, if all wet can be effectually excluded from the base of the stem and from the root by any sloped heading. Under such a verandah, with occasional heat to the flue, during the early summer, and perhaps in severe frost, Amaryllis, Brunsvigia, Buphane, Nerine, Hæmanthus, and all the allied genera of African bulbs, as well as the South Americans, would certainly succeed better than with any other treatment." HERBERT, p. 402.

DERIVATION OF THE NAMES.

CRINUM κρινον KRINON, the Greek for a lily. CAPENSE, a barbarous word intended as Latin for the Cape of Good Hope.

SYNONYMES.

AMARYLLIS CAPENSIS. Miller's Gardener's Dictionary, No. 7. Willdenow Species Plantarum, II, p. 55. Botanical Register, fol. 615.

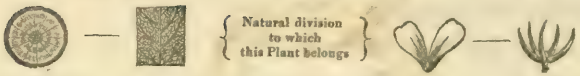
AMARYLLIS LONGIFOLIA. Hortus Kewensis, I, p. 419.

AMARYLLIS REVOLUTEA. Botanical Magazine, 1178.

HOVE'A CEL'SI.

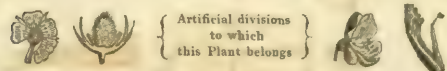
CELS'S HOVEA.

EXOGENÆ, OR DICOTYLEDONEÆ.



NATURAL ORDER, LEGUMINOSÆ.

CALYCIFLORÆ, OF DECANDOLLE.



DIADELPHIA, DECANDRIA, OF LINNEUS.

No. 40.

GENUS. Hovea. *Robert Brown.* Calyx bilabiatus, labio superiore semibifido lato retuso, inferiore tripartito. Carina obtusa. Stamina omnia connexa aut decimo superné plus minus libero. Legumen sessile, subrotundum, ventricosum, dispermum. Semina strophiolata. *Decandolle.*

SPECIES. Hovea Celsi. *Bonpland.* Foliis lanceolatis subrhombeis obtusiusculis mucronatis. Pedunculis axillaribus multifloris, ramis calyce bracteisque pilosiusculis. *Decandolle.*

Character of the Genus, Hovea. Calyx two-lipped, upper lip semibifid, broad, retuse, lower lip three parted. Keel obtuse. Stamens all united into a monadelphous tube, or the tenth stamen more or less detached at the upper part. Legumen or pod sessile, roundish, swelling, two-seeded. Seeds strophiolated.

Description of the Species, Hovea Celsi. An upright shrub, about 4 feet high, dividing into branches about the middle of the stem, Leaves scattered, spreading, stiff, petiolate, elliptico-lanceolate, reticulately veined, mucronate, villous beneath, with more prominent nerves than the upper surface. Peduncles axillary, solitary, longer than the petioles, racemose, bearing from 3-5 flowers with 2 small adpressed bracts at the base of each flower. Flowers blue, veined, about half an inch in length, somewhat nodding. Calyx shorter than the standard, 4-cleft, of a fawn-colour, clothed with silky hairiness, 2-lipped. Upper lip much the longest, broadly wedge-shaped or turbinate with a broad round margin, obscurely notched at the top, somewhat keeled at the back; lower lip three-toothed equal, straight, acute. Standard upright, spreading, smooth, obcordately-round, very much larger than the wings and keel, at the upper margin emarginately incised; a large white spot, sometimes appearing as if two, occupies the base; claw short. Wings spathulately oblong, folding within them the keel,

Reference to the Dissections.

1, Standard. 2, Keel. 3, Wing. 4, Style.

which is much smaller. KEEL obtuse, compressed, purple. STAMENS mon- or diadelphous, equal; anthers small yellow. OVARY pedicellate, short, compressed, 2-seeded, smooth, whitish. STYLE long, smooth. STIGMA formed of a small pubescent head.

POPULAR AND GEOGRAPHICAL NOTICE. This like all the rest of the genus Hovea, with which we are acquainted, is a native of New Holland. It exhibits the peculiarity of the flower-buds of the succeeding year appearing at the bases of those expanded during the present. This is a common condition of leaf-buds which are always visible the season preceding their expansion, but not frequently so with flower-buds, which though they may be formed seven years before their development externally, generally remain concealed till the period of unfolding. Those of the Hovea Celsi, are perfectly protected by the scales in which they are enveloped, which is one of the means by which the God of Nature manifests his care of his creatures,

> He marks the bounds which winter may not pass,
> And blunts his pointed fury; in its case,
> Russet and rude, folds up the tender germ
> Uninjured, with inimitable art;
> And, ere one flowery season fades and dies,
> Designs the blooming wonders of the next.—COWPER.

The under surface of the leaf and stalk are very liable to be infested with an insect, the Greenhouse Coccus, (Coccus Adonidum of Fabricius, Coccus Hesperidum of Kirby and Spence) which can only be removed by the nail being insinuated below it, and so taken from its hold. For some interesting notices of this insect, see Taylor's Scientific Memoirs, Vol. I, p. 214.

INTRODUCTION; WHERE GROWN; CULTURE. Introduced into the Nursery of Mons. Cels, at Paris, by the French expedition, under Capt. Baudin, whence it was brought to Britain in 1817.

The plant from which our drawing was made, flowered in the elegant conservatory of W. Leaf, Esq. Parkhill, Streatham, in May, 1836. It is not so advisable to grow Hoveas in pots, which would seem to be detrimental to them, as in the border of a conservatory. They thrive admirably in an equal mixture of sandy loam and peat;

DERIVATION OF THE NAMES.

HOVEA, in honour of Anthone Pantaleon Hove, a Polish Botanist; who travelled in the Crimea and Persia, and sent many plants to the Kew Gardens. Celsi, in compliment to Mons. Cels, a nurseryman of Paris.

SYNONYMES.

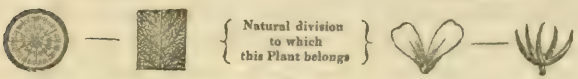
HOVEA CELSI. Bonpland. Plantes de Navarre, t. 51. Ker Botanical Register, t. 280. Decandolle Prodromus Systematis Universalis Reg. Veg. v. II, p. 115.

Luculia gratissima.

LUCU'LIA GRATIS'SIMA.

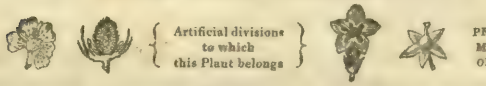
SWEET-FLOWERED LUCULIA.

EXOGENÆ, OR DICOTYLEDONEÆ.



NATURAL ORDER, RUBIACEÆ.

CALYCIFLORÆ, OF DECANDOLLE.



PENTANDRIA, MONOGYNIA, OF LINNEUS.

No. 41.

GENUS. Lucu'lia. *Sweet.* Calycis tubus turbinatus, limbus 5-partitus, laciniis lineari-subulatis æqualibus deciduis. Corolla hypo-craterimorpha, tubo calyce duplo longiore vix superne dilatato, limbo expanso ferè 5-partito, lobis obovatis obtusissimis. Antheræ oblongæ ad faucem subsessiles subinclusæ. Stigmata 2, carnosa. Fructus capsularis obovato-oblongus nudus cicatrice apice notatus bilocularis, septicidè ab apice ad basin dehiscens. Placenta elongata demùm a dissepimento libera. Semina minuta densè sursùm imbricata, alâ membranaceâ dentatâ, ad basin brevissimâ, apice latiore. *Decandolle.* Prodromus Systematis Naturalis Regni Vegetabilis, Pars IV, p. 357.

SPECIES. Lucu'lia Gratissima. *Sweet.* Foliis ellipticis acuminatis multinerviis supra glabris subtus nervisque villosis, sepalis linearibus obtusiusculis tubo corollæ limbo duplo longiore. *Sweet.* British Flower Garden, 145

Character of the Genus, Luculia. Tube of the Calyx turbinate, limb 5-parted, segments linear-awl-shaped, equal, deciduous. Corolla salver-shaped, twice as long as the tube of the calyx, not much dilated at the top, limb expanded nearly 5-parted, lobes obovate, very obtuse. Anthers oblong, nearly sessile at the mouth of the corolla, within which they are almost inclosed. Stigmata 2, fleshy. Fruit capsular, obovate-oblong, naked, marked at the top with a cicatrix, two celled, splitting from the apex to the base with a septicidal dehiscence. Placenta elongated, at last separating from the dissepiment. Seeds minute closely imbricated upwards, surrounded by a toothed membranous wing, very short at the base, broader at the apex.

Description of the Species, Luculia Gratissima. Stem shrubby, in its native country a small tree, branched, branches opposite, round, pubescent. Leaves opposite, spreading elliptical, with a

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Reference to the Dissections.

1, The Corolla laid open to show the stamens as attached thereto.

short point, petiolate, smooth above, the under surface strongly nerved, villous along the course of the nerves. STIPULES longer than the petioles, solitary on each side, broad at the base, pointed at the apex, deciduous, inflorescence a terminal corymb, many-flowered, the branches dichotomous, the superior ones three-flowered. BRACTS opposite, under each division, and at the base of the pedicels, linear deciduous. FLOWERS large, elegant, of a delicate pink, or rose-colour. CALYX, 5-parted, of 5 distinct sepals, which are linear, bluntish, pale red below, with green points, slightly pubescent on the outer surface, resting upon the ovary, deciduous. COROLLA funnel-shaped, tube slender, angular, slightly furrowed, twice as long as the calyx, scarcely widened at the throat, which is destitute of pubescence; limb spreading, deeply 5-lobed, lobes imbricated at the base, margins rounded and slightly crenulate. STAMENS 5, inserted at the throat, the filaments short, thin, anthers erect, scarcely protruding beyond the throat, POLLEN yellow. STYLE smooth, red, not more than half the length of the tube. STIGMAS 2, thick and fleshy, oblong or spathulate, spreading at the point. OVARY top-shaped, fleshy, clothed with a fine down, 2-celled. OVULES numerous.

POPULAR AND GEOGRAPHICAL NOTICE. This plant, which in its native country is a small tree, grows on the exposed hills in the valleys of Nepaul and Silhet, blossoming, according to the situation in which it is found, all the year round. The flowers possess a fragrance which perhaps is not surpassed by any other tree, and they even retain the odor when dried and placed in the herbarium. The bark possesses febrifuge properties, and may be substituted for Cinchona bark, in the treatment of fever. In Bengal it is called USSOKOLI, and in India, generally, the Nepaul Cinchona bark.

As one of the objects in view, in commencing The Botanist, was to aid in extending a beneficial knowledge of the vegetable kingdom, by treating of the various plants figured in this work, not merely as interesting from their beauty, or as isolated members of that kingdom, but by pointing out the relationship or affinity of one plant to another; and as the present subject is well fitted to exemplify our meaning, we avail ourselves of it to make the following remarks. In former times, the end proposed by the study of botany, was seldom more than to ascertain THE NAME imposed upon a plant, and then, perhaps, refer to some work, for information respecting its properties,

or points. For this purpose, any classification, however arbitrary, that led easily to the discovery of the name, was sufficient. But as observed by Professor Daubeny, in his Inaugural Lecture, "The time seems at length arrived, when a more philosophical arrangement of the multitudinous objects which present themselves to us in our survey of the vegetable kingdom, seems feasible—when, instead of resting satisfied with the mode of classification established by Linneus, in which the individuals grouped together possess no necessary resemblance in structure, our primary object should be, to bring together those species, which offer the most numerous and important analogies to each other, in the hopes, hereafter, of constructing a system, where the very place which the plant occupies in it, shall, in a manner, announce its most prominent characters, the virtues which it may possess, and its affinities with others." This is what is contemplated by the Natural Method, in which plants are associated in groups, or tribes; and it is the more worthy of adoption, that it is the only one, which gives botany a claim to the title of a Science—the only one by which the principles of induction can be applied to the study of plants. A natural tribe is neither more nor less than the observed steady association of certain properties, structures, and analogies, in several species and genera. A natural tribe, therefore, may be supposed to be a circle, (a similitude which has been adopted by Mr. Loudon, in his Illustrations of Landscape Gardening) all the plants found within the circumference of which present a certain similarity of external characters, which indicates the existence of a certain similarity of chemical principles, and under parallel circumstances, of medicinal power; so that when acquainted with the structure and properties of any one plant of a tribe, an index is possessed to all the rest. A striking confirmation of this is afforded by the fact, that nations widely apart, and having no scientific intercourse, will be found to employ some species of the same tribe for similar purposes. Nothing can illustrate this better than the tribe of the Cinchonaceæ. Not only do the inhabitants of Peru, employ for the cure of fever, the species of Cinchona, growing among them, those species universally known as Peruvian Bark, but the Brazilians employ with a similar intention, three species of this tribe, native of Brazil; while in French Guiana, the Coutarea speciosa, in Carolina, the Pinckneya pubens, and in the West Indian Islands, various species of Exostemma, yield febrifuge barks. In Africa, the bark of species of this tribe, furnish excellent fever medicines;

while in the East Indies, in addition to the Luculia Gratissima, the barks of several species of the Hymenodictyon, yield febrifuge barks. In short, it may be stated, that of forty-four kinds of bark, which are used as substitutes for the Peruvian Barks, thirty-two are obtained from plants of the tribe of Cinchonaceæ. Nothing can more forcibly demonstrate the advantage of acquaintance with the natural method of botany, as it supplies a key to the knowledge of the properties of plants in every part of the globe.

Introduction; where Grown; Culture. The first plant of this species which grew in Britain, was raised at Ashridge, the Seat of the Countess of Bridgewater, from seeds received from Nepaul. The specimen from which our drawing was taken flowered in the Greenhouse of the Messrs. Henderson, Nurserymen, of Pine Apple Place, London, in December, for which a prize was awarded by the Metropolitan Society of Florists and Amateurs. Much has been said regarding the culture of this plant. Some persons have found it rather difficult of management, from the precise temperature which seems to be most suitable to its successful growth, being intermediate between that of the stove and the greenhouse. In general, however, a warm greenhouse, with frequent pottings, in a mixture of peat, sand, and loam, and the use of plenty of drainers, will ensure rapid growth and splendid flowers. When young plants are required, cuttings should be taken of the half-ripened shoots, which will strike root in sand, under a bell-glass, without bottom heat. They should not be exposed to the direct rays of the sun, nor be kept too moist.

Derivation of the Names.

Luculia, a Latinized form of the native name Luculi Swa. Gratissima, superlative degree of gratus, sweet or grateful, to express the exquisite perfume of the flowers.

Synonymes.

Cinchona Gratissima. Wallich in Roxburgh's Flora Indica, p. I, 154.

Mussænda Luculia, Don, Prodromus Floræ Nepalensis, p. 139.

Luculia Gratissima. Decandolle Prodromus Regni Vegetabilis, Vol. IV, p. 358. Sweet's British Flower Garden, t. 145.

Berberis dulcis

BER'BERIS DUL'CIS.

SWEET-FRUITED BERBERRY.

EXOGENÆ, OR DICOTYLEDONEÆ.

{ Natural division to which this Plant belongs }

NATURAL ORDER, BERBERIDACEÆ.

THALAMIFLORÆ, OF DECANDOLLE.

{ Artificial divisions to which this Plant belongs }

HEXANDRIA, MONOGYNIA, OF LINNEUS.

No. 42.

GENUS. BERBERIS. *LINNEUS.* SEPALA 6 squamis 3 extus stipata. PETALA 6 intus biglandulosa. STAMINA edentula. BACCA 2-3-sperma. SEMINA 2, rarius 3 ad basin lateraliter inserta, erecta, oblonga, testa crustaceâ, albumine carnoso, cotyledonibus foliaceis ellipticis, radicula longâ apice capitellata. *DECANDOLLE* Prodromus Systematis Naturalis Regni Vegetabilis, Pars. I, p. 104.

SPECIES. BERBERIS DULCIS. *Don.* FRUTICOSA ramosa, ramis flexuosis triangularis piloso-pubescentibus. FOLIIS oblongo-ellipticis apice spinoso mucronatis margine cartilagineis: caulinis longe petiolatis: axillis confertis breve petiolatis, petiolis piloso-pubescentibus. FLORIBUS solitariis longe pedunculatis pendulis. David Don, in Sweet's British Flower Garden, 2nd. Series, Folio 100.

CHARACTER OF THE GENUS, BERBERIS. SEPALS six, supported on the outside by 3 scales. PETALS 6, having each two glands on the inside. STAMENS toothless. BERRY 2-3 seeded. SEEDS 2, rarely 3, attached laterally at the base of the seed-vessel, erect, oblong, with a crustaceous testa, and fleshy albumen; cotyledons leafy, elliptical; radicle long, capitellate at the top,

DESCRIPTION OF THE SPECIES, BERBERIS DULCIS. A SHRUB, STEM much branched, 4-10 feet high; branches flexuose, sharply triangular, joints tumid; bark brown, glossy, and thickly clothed with short hair. SPINES 3-5, united at the base, and closely attached to the fasciculi of leaves. LEAVES elliptico-oblong, occasionally lanceolate, terminating in a sharp point, attenuated downwards, with a cartilaginous margin, veins much branched, of a bright shining green on the upper side, paler beneath; arranged in tufts or fasciculi along the stem; of variable size, some being broad, others narrower, surrounded at the base by several brown ovate scales. Stem-leaves on the young growing shoots, possessed of very long foot-stalks, dilated at the base. PETIOLES thickly beset with short hairs, seated on small

REFERENCE TO THE DISSECTIONS.

1, An outer sepal. 2, An inner sepal. 3, A petal. 4, A stamen.

rough glands. Flowers solitary, proceeding from each tuft of leaves along the stem, small, of a fine yellow or orange colour, supported by a peduncle, nearly an inch and half long, which is slender, drooping, and clothed with a short glandular pubescence. Sepals 6, of unequal size, bright yellow, ovate, concave on the upper side, rounded at the points, 3 outer ones about a third less than the inner ones. Petals 6, opposite the sepals, shorter than the inner ones, ovate, entire, concave inwards, somewhat undulate at the margins, rounded at the points, of a rich orange hue. Stamens 6, opposite to the petals: filaments fleshy, thickened as far as where the anther is attached; cells of the anther distinct, pollen granular, glossy. Ovary smooth, roundly oval, tapering towards the stigma, which is large, peltate and orbicular.

Popular and Geographical Notice. The discovery of this interesting plant is due to Mr. Anderson, the botanical collector attached to Capt. King's expedition to the Straits of Magellan. According to him it is found extending from Chiloe, to the Straits of Magellan, unless the plant of Chiloe be a distinct species, a circumstance rendered probable by their being much smaller than the present plant, and by having deciduous leaves, while this one possesses evergreen leaves. The fruit which is black, is not merely ornamental, but useful, being employed to make tarts, sweetmeats, and preserves.

There are many curious points in the structure and habits of the Berberry: the spines are leaves, of which the parenchyma is absent, and the mid-rib indurated; the stamens are remarkable for their irritability, for if the base of a stamen be touched with a pin or knife, it springs forward and strikes the pistil. The same occurrence is observed when the opposite poles of a glavanic battery are attached, one to the petal, to which the stamen is fixed, the other to the pistil.

Introduction; Where Grown; Culture. Introduced about 1828, by Mr. Anderson, to Lowe's Nursery, at Clapton. It is quite hardy, and may be propagated by layers, or may be inarched on the common Berberry; or young cuttings, planted under bell-glasses in pots of sand, will strike root readily. A mixture of sandy loam and peat, or sandy peat alone, is suitable to it.

Derivation of the Names.

Berberis, according to some, from Βερβαρι, the Greek for a shell, the leaves of some species shining like a shell; according to others, from amburbarees, the name of the common Berberry, in Avicenna. Dulcis sweet.

Synonymes.

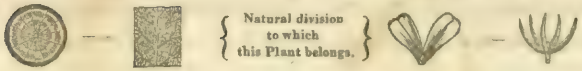
Berberis dulcis. *Don.* In Sweet's Flower Garden, 2nd Series, Folio 100.

Polygala speciosa.

POLY'GALA SPECIO'SA.

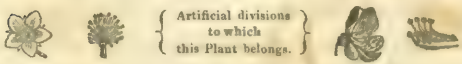
SHEWY MILKWORT.

EXOGENÆ, OR DICOTYLEDONEÆ.



NATURAL ORDER, POLYGALACEÆ.

THALAMIFLORÆ, OF DECANDOLLE.



DIADELPHIA, OCTANDRIA, OF LINNEUS.

No. 43.

GENUS. Polygala. *Tournefort.* Calycis sepala persistentia, 2 interiora alæformia. Petala 3-5 tubo stamineo connexa, inferiore carinæformi (forsan e duobus coalitis constante.) Capsula compressa elliptica obovata aut cordata. Semina pubescentia, hilo carunculata, comâ destituta.

SPECIES. Polygala Speciosa. *Sims.* Foliis inferioribus oblongo-cuneatis obtusis, superioribus linearibus, ramisque virgatis glabris, bracteis deciduis; pedicellis patulis, alis subrotundis. *Decandolle.* Prodromus Systematis Universalis Regni Vegetabilis, Part I, p. 391, 233.

Generic Character of Polygala. Calyx consisting of 5 persistent sepals, of which the two interior are wing-shaped. Petals 3-5, united to the tube of the stamens, the inferior keel-shaped, (probably formed of two petals cohering.) Capsule compressed elliptical obovate, or heart-shaped. Seeds with hairy pubescence, carunculated at the hilum, not comose.

Description of the Species, polygala speciosa. Stem shrubby, erect, 5-6 feet high, not much branched, green, inclining to purple. Leaves alternate, linear-oblong, obtuse or emarginate, sometimes mucronate. Flowers in terminal racemes, large, shewy; bracts deciduous: three exterior sepals of calyx small, greenish, two interior large, wing-shaped, purple, beautifully veined; two of the petals small, the third large, keel-shaped, bearded. Stamens eight, united at the base into a two-cleft tube. Anthers oblong, adnate. Style nearly enclosed by the keel, long, slender, curved, stigma two-cleft,

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Reference to the Dissections.

1, Shows the pistil, with three of the sepals attached; the remaining two wing-shaped petaloid sepals are represented at No. 4. 2, Shows the stamens united into a tube, surrounding the pistil. 3, The bearded keel-shaped petal, sometimes called the crest. To the common observer these constituent parts of the flower of Polygala will seem to resemble those of a papilionaceous flower, although essentially different. These peculiarities, and the natural affinities of the plant, will come under consideration in the Guide.

one of the sides erect, and emarginate, the other hanging down, green, glutinous on the under side, by which it attaches the pollen. CAPSULE, compressed.

POPULAR AND GEOGRAPHICAL INFORMATION. This species which is one of the most shewy of the genus, is like many of its allies, found exclusively at the Cape of Good Hope. So many plants indeed are limited to that region of the earth, that the vegetation of the extra-tropical part of South Africa is quite peculiar and characteristic. Schouw has called it the kingdom of Stapelias, and Mesembryanthemums, but it might with more propriety be termed that of Ericas and Pelargoniums.

INTRODUCTION; WHERE GROWN; CULTURE. This species was introduced into the gardens of this country, in 1814, by the Messrs. Young of Epsom, having been raised by them from seeds furnished by Sir John Jackson. It requires the shelter of the greenhouse; and thrives well in a mixture of sand, with two-thirds peat, and one-third turfy loam. To obtain cuttings fit for planting, the branches should be topped, when numerous young shoots will spring out, which should be taken off close to the old branches, when about three inches long, and in a growing state; then planted in pots of sand under a hand-glass, and placed in a close frame. It is a very showy plant, when in flower, but at other times, appears deficient of foliage, and being a deciduous shrub, it is completely denuded in winter. It is a suitable conservatory plant, and is said to be so hardy, as to bear the open air, at Dysart, close to the sea-shore, in Fifeshire. It is well known, that near to the coast, many plants will bear to be exposed, during winter, which cannot be so treated in the interior of the country. The caloric of the sea being given out at that season, equalizes and moderates the temperature.

DERIVATION OF THE NAMES.

POLYGALA, from πολυ, poly, much, and γαλα, milk, either on account of the milk contained in the root, or as some think, from being supposed to increase the quantity of milk in cattle, which feed upon these plants. SPECIOSA, from speciosus, shewy.

SYNONYMES.

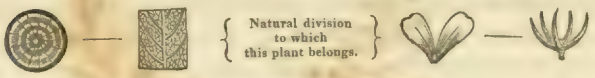
POLYGALA SPECIOSA. Sim's in Botanical Magazine, 1780. (The other reference given in Don's Dict. to Bot. Mag. is a mistake. Ker in Botanical Register, 150. Don in General Dictionary of Gardening and Botany, Vol. I, p. 350.

Clianthus puniceus

CLIAN'THUS PUNI'CEUS.

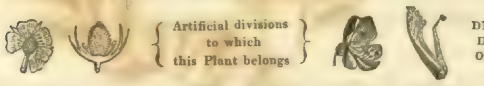
CRIMSON CLIANTHUS, OR GLORY-PEA.

EXOGENÆ, OR DICOTYLEDONEÆ.



NATURAL ORDER, LEGUMINOSÆ.

CALYCIFLORÆ, OF DECANDOLLE.



DIADELPHIA, DECANDRIA, OF LINNEUS.

No. 44.

GENUS. CLIANTHUS. *SOLANDER.* CALYX latè campanulatus, subæqualis, 5-dentatus. VEXILLUM acuminatum, reflexum, alis parallelis longius; carina scaphiformis, vexillo alisque multo longior, omninò monopetala. STAMINA manifestè perigyna, diadelpha, omnia fertilia. STYLUS staminibus duplo longior, versus apicem hinc leviter barbatus, stigmate simplicissimo. LEGUMEN pedicellatum, coriaceum, acuminatum, ventricosum, polyspermum, intus lanulosum, suturâ dorsali rectâ ventrali convexâ. SEMINA reniformia, funiculis longiusculis affixa. *LINDLEY* in Botanical Register, folio 1775.

SPECIES. CLIANTHUS PUNICEUS. *SOLANDER.* SUFFRUTICOSUS diffusus glaber, foliolis alternis oblongis subemarginatis, racemis pendulis multifloris, calyce 5-dentato, legumine glabro. *LINDLEY.* Botanical Register, 1775.

CHARACTER OF THE GENUS, CLIANTHUS. CALYX widely campanulate, nearly equal, 5-toothed. STANDARD acuminate, reflexed, longer than the parallel wings, keel skiff-shaped, much longer than the standard and wings, completely monopetalous. STAMENS manifestly perigynous, diadelphous, all fertile. STYLE twice as long as the stamens, towards the apex slightly bearded, stigma quite simple. LEGUMEN pedicellate, coriaceous, acuminate, ventricose, many-seeded, somewhat woolly within, dorsal suture straight, ventral suture convex. SEEDS kidney-shaped, attached by rather long chords.

DESCRIPTION OF THE SPECIES, CLIANTHUS PUNICEUS. STEM branched from 2-4 feet high, round, smooth, except when cracked, devoid of all pubescence save on the under surface of the young leaves, and on the green parts of the flower; branches green. LEAVES alternate, stipulate, oddly pinnate, of 8 pairs of folioles; folioles oblong, obtuse, subemarginate, distinctly alternate: stipules green, ovate, reflexed, very much smaller than the folioles. RACEMES pendulous, many-flowered; axis flexuous; BRACTS ovate, reflexed, very much shorter

REFERENCE TO THE DISSECTIONS.
1, Stamens and Pistil. 2, Calyx. 3, Wing. 4, Keel.

than the slender bracteolated pedicels. Calyx 5-toothed, teeth acuminate. Standard ovato-lanceolate, acuminate, reflexed, 2 inches long, externally of a rose-colour, internally of a deep blood-colour except when towards the base it is marked with interrupted white streaks or lines. Wings of a blood-red colour, obtuse, about 1½ inch in length. Keel quite monopetalous, acuminate, nearly 3 inches long, of a reddish orange colour, pale towards the base. Pod nearly 3 inches in length, dark-brown, veined. Seeds kidney-shaped, brown, speckled with black spots.

Popular and Geographical Notice. The enterprising naturalists, Banks and Solander, who accompanied Captain Cook, in 1769, first discovered this plant in the northern interior, of New Zealand; it was again discovered by the missionaries in 1831. Its native name is Kowainqutukaka or Parrot's-bill: but it is most justly entitled to the name, given by Solander, of Flower of Glory. A group of such shrubs would realize the description by the poet—

> Of flowers that with one scarlet gleam
> Cover a hundred miles, and seem
> To set the hills on fire!

Introduction; where grown; Culture. Mr. Richard Davis, Missionary Catechist at New Zealand sent the seed of Clianthus puniceus to the Rev. John Noble Colman, of Ryde, Isle of Wight, who sowed it as soon as it was received in the autumn of 1831. In the following spring they produced several fine plants. The specimen from which our drawing was made flowered in May, 1836, in the rich collection of William Leaf, Esq. Parkhill, Streatham. Cuttings strike root most readily under a hand-glass, indeed where its branches touch the ground, they will take root like Verbena Melindris. Trained to a southern wall, it will grow luxuriently, but notwithstanding its apparent health, during winter, in such situation, when spring succeeds, it betrays its southern origin, and either dies, or recovers with difficulty.

Derivation of the Names.

Clianthus, from κλεῖος glory, and *ανθος* a flower. Puniceus, scarlet, from Punicus, of or belonging to Phœnicia, of which Tyre was famous for its dye of purple, said to be obtained from a species of shell-fish of the genus Murex.

Synonymes.

Clianthus puniceus, Solander, Manuscript in British Museum. Allan Cunningham in Transactions of Horticultural Society, New Series, Vol. I, p. 521, t. 22. Hooker in Botanical Magazine, folio 3584.

Donia punicea. George Don's General Dictionary of Gardening and Botany, Vol. II, p. 468.

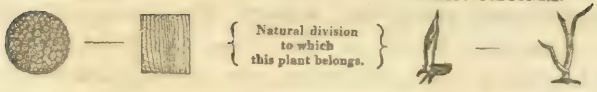
Lilium speciosum

Mrs Withers del.

LIL'IUM SPECIO'SUM.

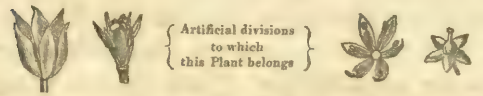
SHEWY LILY.

ENDOGENÆ, OR MONOCOTYLEDONEÆ.



NATURAL ORDER, TULIPACEÆ.

HYPOGYNOSÆ, OF LINDLEY.



HEXANDRIA, MONOGYNIA, OF LINNEUS.

No. 45.

GENUS. Lilium. *Linneus.* Perigonium corollinum, deciduum, hexaphyllum; foliola basi subcohærentia, infundibuliformi-campanulata, apice patentia vel revoluta, intus sulco nectarifero instructa. Stamina 6, perigonii foliolis basi subadhærentia. Ovarium triloculare. Ovula plurima, biseriata, horizontalia, anatropa. Stylus terminalis, subclavatus, rectus vel subcurvatus; stigma subtrilobum. Capsula trigona, sexsulca, trilocularis, loculicido-trivalvis. Semina plurima, biseriata, horizontalia, plano-compressa, testa lutescente, subspongiosa, membranaceo marginata, rhaphe hinc per marginem decurrente. Embryo in axi albuminis carnosi rectus vel segmoideus, extremitate radiculari umbilico proxima. *Endlicher.* Genera Plantarum, p. 141.

SPECIES. Lilium speciosum. *Thunberg.* Foliis sparsis petiolatis; caule ramoso, ramis unifloris, flore cernuo, corollis revolutis intus papuloso-dentatis. *Willdenow.* Species Plantarum, Vol. II, p. 86.

Character of the Genus, Lilium. Perigone resembling a corolla, deciduous, of six pieces or folioles; folioles slightly cohering at the base, funnel-shaped or campanulate, spreading at the apex, or curved back, having on the inner surface a nectariferous groove. Stamens six, slightly adhering to the base of the folioles of the perigone. Ovary three-celled. Ovules numerous, in two rows, horizontal, anatropous. Style terminal, somewhat club-shaped, straight or only slightly curved; stigma somewhat three-lobed. Capsule three-cornered, six-furrowed, three-celled, becoming three-valved by a loculicidal dehiscence. Seeds numerous, in two rows, horizontal, compressed into a flat form, test yellowish, somewhat spongy, furnished with a membranaceous margin, along which the raphe runs. Embryo either straight or segmoid in the axis of a fleshy albumen, the radical extremity next the umbilicus.

Description of the Species, Lilium Speciosum. Stem a scaly bulb, from which springs the part bearing the leaves and flowers. Leaves scattered, alternate, shortly petiolate, lanceolate, acute, about six inches long, green on both surfaces but of a lighter hue beneath,

which is almost shining. From the base to the apex of each leaf run several parallel veins or nerves, which are very prominent on the under surface, the central ones most conspicuous, the lateral ones less so. Flowers axillary and terminal, solitary. Perigone (corolla of Linnean writers) of six folioles, of which three are exterior, three placed more internal, of an exquisite rose-colour. Each foliole unguiculate at the base, but with the limb reflected, whitish towards the base, but near the central part, of a pink or red ground, marked with prominent points and round spots. Stamens six, filaments thick below, tapering towards the apex; anthers versatile: pollen brownish yellow. Style one, somewhat club-shaped. Stigma yellow, 3-lobed.

Popular and Geographical Notice. This species, perhaps one of the most gorgeous of that tribe which Linneus termed the patricians of the vegetable kingdom, is a native of Japan, a country with the productions of which we are very imperfectly acquainted, owing to the jealousy of its people, which is as great as that of their Chinese neighbours. Siebold was, however, allowed to penetrate into the interior, and brought off the present plant among his other spoils.

Introduction; where grown; Culture. The first plants were sent by Siebold to Holland, and by propagation are now in the hands of the nurserymen of Ghent, from whom bulbs were purchased by the Messrs. Loddiges at Hackney, in 1836. In their conservatory, flowers were produced in August, 1837, and to their extreme politeness we are indebted for the opportunity of figuring it. It is not yet ascertained what degree of temperature this splendid Lily will bear, but it may be presumed that protection from frost will be all that is requisite. A light loamy soil, upon a dry bottom, is favourable to the growth of such plants. From various trials of bog earth, however well it may have been pulverized by frost, or the addition of sand, we believe it to be injurious to the growth of Lilies.

Derivation of the Names.

Lilium, from the celtic Li, white, alluding to the purity of the early-known species. Speciosum, shewy, from the gay appearance of the flowers.

Synonymes.

Lilium superbum. *Thunberg.* Flora Japonica, p. 134.

Lilium speciosum. *Thunberg.* Transactions of Linnean Society, Vol. II, p. 332. Bot. Register, folio 2000.

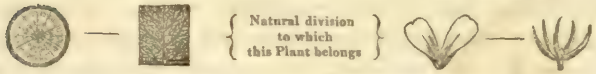
Thibaudia gracilis.

Barnes del.

PHILIBERTIA GRA'CILIS.

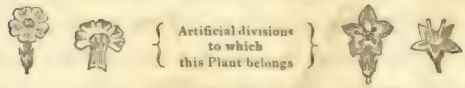
SLENDER PHILIBERTIA.

EXOGENÆ, OR DICOTYLEDONEÆ.



NATURAL ORDER, ACLEPIADACEÆ.

COROLLIFLORÆ, OF DECANDOLLE.



PENTANDRIA, DIGYNIA, OF LINNEUS.

No. 46.

GENUS. Philibertia. *Humbolt* and *Kunth*. Calyx 5-partitus. Corolla urceolato-rotata, sinuato quinque-loba, lobis acutis denticulis interjectis; tubus brevis, mediante toro carnoso apice quandoque annuliformi et undulato gynostegii (columnæ staminæ *Brown*) basi adnatus. Corona staminea simplex, 5-phylla, foliolis carnosis summo gynostegio insertis, integris. Antheræ membrana terminatæ. Massæ pollinis clavato-cylindraceæ, ad apicem fere affixæ. Stigma brevissimum vel breviter rostratum apice biapiculatum. *Hooker*, Journal of Botany, Vol. 1, p. 290.

SPECIES. Philibertia gracilis. *D. Don*. Foliis profunde cordatis acuminatis subtomentosis, corollâ calyce ter longiore, coronæ interioris foliolis ventricosis anticè mucronatis. Sweet's Flower Garden, folio 403.

Character of the Genus, Philibertia. Calyx 5-parted. Corolla urceolate-rotate, sinuately 5-lobed, lobes acute with little teeth interposed; tube short, adnate by means of a fleshy torus, by the apex, and, when the torus is ring-shaped and undulating, to the base of the gynostegium (the staminal column of Brown.) Staminal corona simple, 5-phyllous; folioles fleshy, inserted on the top of the gynostegium, entire. Anthers terminated by a membrane. Pollen masses cylindrically-club-shaped, attached almost to the apex. Stigma very short, or shortly beaked, two-pointed at the apex.

Description of the Species, Philibertia gracilis. Plant perennial, entirely clothed with soft spreading hairs. Stems very slender not thicker than a crow-quill, twining, attaining the length of six feet. Leaves opposite, petiolate, cordate, oblique, acuminate, pubescent, soft, of a greyish green, lighter on the under surface. Petioles slender, about half-an-inch long. Inflorescence umbellate; umbels solitary, interpetiolary, of from 3 to 5 flowers. Peduncles filiform, from 1 to 2 inches long; pedicels bracteate, about half-an-inch in length. Bracts linear, acute. Calyx of 5 leaves cohering at the base; segments linear-lanceolate, acute, spreading. Corolla three times as long as the calyx, campanulate, externally hairy,

smooth within, the ground of a yellowish white, blotched with purple or flesh-coloured spots; limb spreading, 5-lobed; lobes triangular, acute, the sinuses or intermediate parts prolonged into short teeth. Corona double, the exterior one annular, entire, interior one of 5 fleshy gibbous, yellow segments, having each a short spur-like point on the inner side near the apex. Stamens 5, filaments short, membranous, connate. Anthers 2-celled, surmounted by a short, rounded, truncate, membranous appendage. Pollen-masses club-shaped, somewhat compressed, smooth, yellow, waxy, glossy, pendulous, connected by a short, somewhat arrow-shaped chocolate-coloured gland. Gynostegium thickened, obtusely 5-angular, placed immediately below the two prominent lobes of the stigma; angles obtuse, resembling a gland, viscid. Ovaries two, swelling, smooth. Styles subulate, longer than the ovaries. Stigmas small, truncate.

Popular and Geographical Notice. This addition to the genus Philibertia is a native of the district between Buenos Ayres and Tucuman, where it was discovered by Mr. Tweedie, who sent it to his friends in this country, under the name of "Green-flowering Asclepias of Saint Kathrens." Its flowers serve well to exhibit the curious structure of asclepiadaceous plants, for our general knowledge of which we are indebted to Mr. Robert Brown (Memoirs of Wernerian Society, Vol. I, p. 19.) whose acumen has also revealed to us the singular mode of fecundation of these plants. (Trans. of Linnean Society, Vol. XVI.

Introduction; where grown; Culture. Seeds of the Philibertia gracilis, were sent by Mr. Tweedie, in the later part of the year 1835, to various British cultivators. A portion of these were received by Mr. Nevin, of Glasnevin Garden, Dublin, who kindly supplied us with a drawing from one of his plants, which had been trained to a support in the stove, where it had proved evergreen, and flowered from May till October. It can scarcely be doubted but that if young plants be turned into the open ground, in May, and trained to a wall, they will become very ornamental. Cuttings strike root readily, and a soil composed of a sandy loam and peat proves suitable to its growth.

Derivation of the Names.

Philibertia, in honour of J. C. Philibert, author of Notions élémentaires de botanique, et Introduction à l'etude de la botanique. Gracilis, from the slender nature of the stem.

Synonymes.

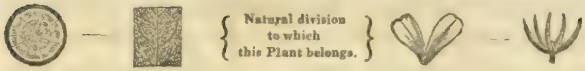
Philibertia gracilis. David Don in British Flower Garden, folio 403.
Philibertia grandiflora. Sir W. J. Hooker, in Botanical Magazine, 3618.

Statue arborea

STATICE ARBOREA.

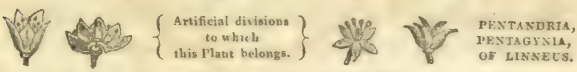
TREE-LIKE STATICE.

EXOGENÆ, OR DICOTYLEDONEÆ.



NATURAL ORDER, PLUMBAGINACEÆ.

MONOCHLAMYDEÆ, OF DECANDOLLE.



PENTANDRIA, PENTAGYNIA, OF LINNEUS.

No. 47.

GENUS. STATICE. *LINNEUS.* FLORES spicato-paniculati. CALYX monophyllus plicatus subscariosus. PETALA 5-subconnata. STAMINA basi petalorum inserta. UTRICULUS monospermus calyce inclusus. SPRENGEL Species Plantarum, Vol. I, p. 534.

SPECIES. STATICE ARBOREA. *BROUSSONET.* CAULE arborescente, foliis ovatis obtusis mucronatis basi augustatis, paniculâ composita terminali, ramis paniculæ alato-ancipitibus. *WILLDENOW.* Enumeratio Plantarum Horti Botanici Berolinensis, I, p. 337.

CHARACTER OF THE GENUS, STATICE. FLOWERS spiked, or panicled. CALYX of a single piece, monosepalous, plaited, somewhat scarious. PETALS 5, slightly connate. STAMENS attached to the base of the petals. UTRICLE one-seeded, inclosed in the calyx.

DESCRIPTION OF THE SPECIES, STATICE ARBOREA. STEM erect, disposed to become woody. LEAVES with long petioles; radical leaves 6-8 inches long, 2½ inches broad. Stem leaves crowded at the top of the branches. PANICLE supported on a long peduncle, terminal, resembling a corymb, which is roundish, or two-edged, the pedicels winged on each side. CALYX cup-shaped, angular, limb undivided, but acutely pointed, of a fine lilac colour, persistent. COROLLA white, tube nearly cylindrical, limb spreading, undivided, rounded, caducous, or quickly falling. STAMENS 5, not so long as the tube of the corolla. OVARY oblong. STYLES slender.

POPULAR AND GEOGRAPHICAL NOTICE. Among the many beautiful species of Statice, none surpass the present one in elegance. It is a native of Teneriffe, and so forms a connecting link between the vegetation of tropical and temperate climates.

INTRODUCTION; WHERE GROWN; CULTURE. Though this species was introduced into the Botanic Gardens of the continent about the beginning of the present century, it was not known in this country till very lately. The merit of introducing it is due to Philip Parker

Webb, Esq., who has spent several years in exploring the natural productions of the Canary Isles, and is now engaged with M. Berthollet, in publishing an account of them, under the title L' Histoire Naturelle des Isles Canariennes. This gentleman sent it to his garden, near Guildford, and permitted it to be propagated by Messrs. Penny and Young, of the Guildford Nursery. It is still extremely rare. Our drawing was made from a plant belonging to Wm. Leaf, Esq., Parkhill, Streatham. It may be kept in the Conservatory, but when the flower is setting it is better to have stove heat.

There is not, perhaps, a more singular and beautiful display of the adaptation of vegetable action, to the purpose of reproduction than exists in the Statice. It is, indeed, true that wonders meet us at every step we take through the mazes of vegetable physiology; and it should be esteemed a high privilege which man enjoys in being admitted to a knowledge of these operations of the Creator in the economy of His works. When we consider that such privileges are granted as a means of intellectual improvement and gratification, it would betray an apathy and a negligence unworthy of rational beings, were we to shut our eyes to these evidences of divine power and wisdom. The physiological fact to which we have alluded exists in the arrangement of the parts of fructification within the ovary of the Statice. It is known to the vegetable physiologist that the pollen has, generally, a direct communication through the style to the ovules. In these parts of the Statice, an obstacle to such communication occurs by the interposition of a small membranous strap; no sooner, however, is the influence of the pollen exerted thereon but it slips aside, and a passage is opened between the pollen and the ovules. To render this subject quite intelligible to all our readers, engravings would be necessary, and it will be one of our objects in the GUIDE (attached to the BOTANIST) to elucidate such facts as these in the most distinct manner; and as far as we are able, to open to our readers that page of nature descriptive of her mysterious operations.

DERIVATION OF THE NAMES.

STATICE, from Στατίζω, STATIZO, to stop, some of the species possessing astringent properties. ARBOREA, from arbor, a tree, as this species has a tendency to form a woody stem.

SYNONYMES.

STATICE ARBORESCENS. Broussonet. Catalogus Monspessulanus.

STATICE ARBOREA. Willdenow. Enumeratio Horti Berolinensis, I, p. 337. Poiret. Encyclopedie Methodique: Supplement, Vol. V, p. 236.

Acacia pubescens.

ACA'CIA PUBES'CENS.

PUBESCENT ACACIA.

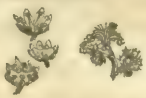
EXOGENÆ, OR DICOTYLEDONEÆ.

{ Natural division to which this Plant belongs }

NATURAL ORDER, LEGUMINOSÆ.

CALYCIFLORÆ, OF DECANDOLLE.

{ Artificial divisions to which this Plant belongs }



POLYGAMIA, MONŒICIA, OF LINNEUS.

No. 48.

GENUS. ACACIA. (*NECKER.*) FLORES polygami. CALYX 4-5 dentatus. PETALA 4-5. nunc libera, nunc in corollam 4-5 fidam coalita. STAMINA numero varia 10-200. LEGUMEN continuum exsuccum bivalve. *DECANDOLLE.*

SPECIES. ACACIA PUBESCENS. *R. BROWN.* Ramis teretibus hirsutis, pinnis 3-10 jugis, foliolis 6-18 jugis linearibus glabris, petiolo eglan duloso, capitulis globosis pedicellatis secus pedunculum axillarem longe racemosis. *IBID.*

CHARACTER OF THE GENUS, ACACIA. FLOWERS polygamous. CALYX 4-5 toothed. PETALS 4-5, sometimes free, sometimes united into a 4-5 cleft corolla. STAMENS varying in number from 10 to 200. LEGUMEN continuous (not lomentaceous) dry, two-valved.

DESCRIPTION OF THE SPECIES, ACACIA PUBESCENS. A SHRUB, pubescent, branched, naked below, leafy above; of a greyish green colour. BRANCHES alternate, spreading. LEAVES alternate, nearly sessile, devoid of stipules, oblong, bipinnate, without an odd leaflet at the summit. Primary folioles of from 10 to 12 pairs, opposite. Secondary folioles equal in number to the primary ones, alternate, distichous, closely approximating, horizontal, nearly sessile, linear, obtuse, smooth, with a very minute point; extremely small and feathery. Common petiole convex below, angular above, furrowed along the sides, swollen, and articulated at the base, rough, with numerous horizontal hairs. Petioles of the primary folioles swollen and articulated at the base, or compressed, having some scattered hairs above, smooth below. Petioles of the secondary folioles scarcely visible. RACEMES axillary. PEDUNCLE cylindrical, devoid of flowers below, bearing flowers towards the upper part. FLOWERS in small capitules, approximating, from 10 to 12 on each peduncle; pedicels alternate, bracteated; BRACTS solitary, oval, acute, very small, and falling early. CA-

REFERENCE TO THE DISSECTIONS.

1, Corolla laid open to shew the stamens and pistillum. 2, an unexpanded flower. 3, a flower, when expanded, shewing the projecting stamens. 4, a stamen seen from the back, 5, a flower of the natural size. 6, one of the bracts from the base of fig. 2. 1, 2, 3, 4, and 6, magnified.

LYX campanulate, smooth, of a pale yellow, very short, limb of 5 straight teeth. COROLLA of 5 straight petals, oval, acute, concave, inserted at the base of the calyx. STAMENS numerous, yellow, approximating at the base, distinct and spreading towards the upper part; filaments slender, longer than the corolla; anthers straight, rounded, two-lobed, opening by lateral lines. OVARY oval, obtuse, slightly compressed, smooth. STYLE lateral, straight, slender, longer than the stamens. STIGMA simple.

POPULAR AND GEOGRAPHICAL NOTICE. This plant is a native of the Eastern part of New Holland. While the true Mimosas are almost completely confined within the tropics, the Acacias extend more towards the Poles, but chiefly the South Pole; their leaves are less irritable than those of the genuine Mimosas, such as the Sensitive Plant, but the Acacia pubescens is influenced by light in a very peculiar manner. Towards evening, or during gloomy weather, the primary petioles bend downwards, while the secondary petioles take a horizontal direction, approximating each other by their faces. These movements, and the prevalence of such shrubs in the Southern hemisphere, justify the introduction of them by James Montgomery, as a part of the scenery of the Pelican Island.

> Plants of superior growth now sprang apace,
> With moon-like blossoms crowned, or starry glories;
> Light flexible shrubs, among the greenwood played
> Fantastic freaks,—they crept, they climbed, they budded,
> And hung their flowers and berries in the sun;
> As the breeze taught, they danced, they sung, they twined
> Their sprays in bowers, or spread the ground with net-work.

INTRODUCTION; WHERE GROWN; CULTURE. Introduced into Britain in 1790. The plant from which our drawing was made, flowered in March, 1837, and continued in flower for two months, in the elegant conservatory of Wm. Leaf, Esq., Parkhill, Streatham. It grows about 18 feet in height, and constitutes, when in flower, the most beautiful sight we have witnessed in any collection in Europe. It requires, like most New Holland plants, a free supply of water.

DERIVATION OF THE NAMES.

ACACIA, from *ακαζω* Akazo, to sharpen, many species having sharp thorns. PUBESCENS, pubescent, in allusion to the soft hairs, or pubescence, with which nearly all the plant is covered.

SYNONYMES.

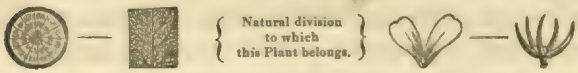
ACACIA PUBESCENS. Robert Brown, in Hortus Kewensis, Vol. 5, p. 467. Botanical Magazine, Folio 1263. Decandolle. Prodromus Systematis Naturalis Regni Vegetabilis. Pars. II, p. 468.

MIMOSA PUBESCENS. Ventenat Jardin de Malmaison, t. 21.

SOLA'NUM BALBI'SII.

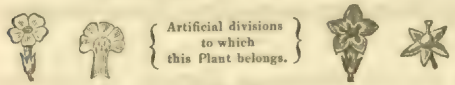
BALBIS'S SOLANUM.

EXOGENÆ, OR DICOTYLEDONEÆ.



NATURAL ORDER, SOLANACEÆ.

COROLLIFLORÆ, OF DECANDOLLE.



PENTANDRIA, MONOGYNIA, OF LINNEUS.

No. 49.

GENUS. Solanum. *Linneus.* Calyx 4-15 dentatus lobatusve, persistens, sæpe accrescens. Corolla rotata; tubo brevi, limbo magno, plicato, 5-angulato, interdum 4-6 lobato, patente. Stamina 5, aliquando 4-6; filamentis subulatis, brevibus, interdum inæqualibus; antheris oblongis bilocularibus, sæpius æqualibus, approximato-coadnatis, apice poris duobus dehiscentibus. Ovarium subrotundum; stylus filiformis; stigma obtusum subsimplex aut 2-3-4-fidum. Bacca subrotunda, 2-3-4-locularis. *Pouchet*: Histoire des Solanees, p. 205.

SPECIES. Solanum Balbisii. *Dunal.* Caule fruticoso, villoso, aculeato; foliis pinnatifidis, laciniis acutis sinuato-dentatis, racemis cymosis lateralibus terminalibusque. *Dunal:* Histoire de Solanum, p. 232.

Character of the Genus, Solanum. Calyx of 4 to 15 teeth or or lobes, persistent, often accrescent. Corolla rotate; tube short, limb large, plaited, 5-angled, sometimes 4-6 lobed, spreading. Stamens 5, occasionally 4-6, filaments awl-shaped, short, sometimes unequal; anthers oblong, 2-celled, generally equal, approximating coadnate, dehiscing by two pores at the apex. Ovary roundish; style slender, stigma obtuse, either simple, or 2-3-4-cleft. Berry roundish, 2-3-4-celled. Seeds numerous, ovate, often compressed, surrounded by a thin diaphanous pulp.

Description of the Species, Solanum Balbisii. Plant erect, two or three feet high, stem intermediate between the consistence of a shrub and a herbaceous plant, branched. Whole surface, except the superior surface of the corolla, clothed with rough pubescence, having interspersed, on the stem, the mid-rib and principal nerves of the leaves on the peduncles and the calyx, stiff sharp-pointed aculei or prickles. (An intermixture similar to the hairs and prickles of many species of Roses.) Leaves alternate, petiolate, somewhat ovate, deeply pinnatifid, segments sinuately lobed or toothed, both surfaces pubescent, with aculei also along the mid-rib and nerves on both sides, upper surface deep green, under lighter, slightly viscid when touched. Racemes of

flowers, both lateral and terminal disposed in cyme-like groups. Calyx 5-lobed, pubescent, with few aculei. Corolla large, spreading, 5-lobed, lobes rather acute, under surface slightly pubescent: upper surface smooth, colour nearly pearly white. Stamens 5, equal, free, filaments short, anthers long, yellow. Ovary globose, style short, stigma capitate. Fruit nearly the size of a cherry, almost entirely covered by the persistent accrescent calyx. Seeds numerous, kidney-shaped, margined.

Popular and Geographical Notice. The present species is a native of Brazil and other parts of South America; there are several varieties of it, as far as difference in the colour of the flowers is sufficient to constitute a variety, some being blue (which is the more generally their hue) others purple (Bot. Mag. 2828) while our plant has the flowers white, and is altogether more delicate than the other two sorts. To this difference little importance should be attached, as the same diversity of colour may be observed in the flowers of the common potatoe (Solanum tuberosum.) The fact of the calyx being in this, and several other species of the genus, accrescent is worthy of more notice, as a similar disposition to enlarge exists in the calyx of the Physalis Alkekengi (the Winter Cherry) and the Nicandra physaloides (the Alkekengi of the gardens.)

Introduction; Where grown; Culture. The blue-flowered variety was introduced in 1816, but we are ignorant at what time the present variety became known to British cultivators. We are indebted to Mrs. Lawrence of Drayton Green, for the opportunity of having it drawn. It is kept in the greenhouse, which probably its greater delicacy renders advisable; but the others seem capable of enduring our out-of-door climate. "A specimen" says Mr. Loudon in his Arboretum Britannicum, p. 1268. "planted against the wall in the Horticultural Society's garden, in 1833, grows vigorously, and flowers freely every year."

Derivation of the Names.

Solanum from solari to assuage, from the sedative power of some of the species.
Balbisii, after Balbis, who first described it under the name S. decurrens.

Synonymes.

Solanum Balbisii. Dunal: Histoire de Solanum, p. 232. Sprengel Systema Vegetabilium I, p. 687.
Solanum sisymbrifolium. Encyclop. Method. IV, p. 307.
Solanum viscosum. Lagasca: Genera et Species, p. 10, No. 145.

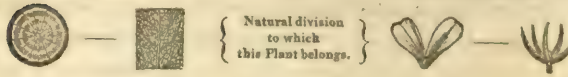
Leontice chrysogonum.

J.S. Hendrix del.

LEONTICE CHRYSO'GONUM.

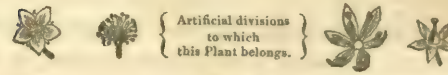
GOLDEN-KNEED LION'S LEAF.

EXOGENÆ, OR DICOTYLEDONEÆ.



NATURAL ORDER, BERBERACEÆ.

THALAMIFLORÆ, OF DECANDOLLE.



HEXANDRIA, MONYGYNIA, OF LINNEUS.

No. 50.

GENUS. LEONTICE. *LINNEUS.* SEPALA 6 (nunc 3-6), extus nuda. PETALA 6, intus basi squammulam gerentia (nunc poro nectarifero solummodo instructa). CAPSULA vesicaria 2-4 sperma. SEMINA in fundo capsulæ inserta, globosa. *DECANDOLLE.* Prodromus regni vegetabilis, Vol. I, p. 109.

SPECIES. LEONTICE CHRYSOGONUM. FOLIIS pinnatisectis, segmentis sessilibus ovali-oblongis apice 3-5 fidis, bracteis parvis scariosis. Ibid.

CHARACTER OF THE GENUS, LEONTICE. SEPALS 6 (in the present case varying from 3 to 6) without any bracteal scales. PETALS 6, each of their claws bearing a small scale on the inside, (in this instance there is only a nectariferous pore.) CAPSULE bladdery with 2 to 4 seeds. SEEDS attached to the bottom of the capsule, globose.

DESCRIPTION OF THE SPECIES, LEONTICE CHRYSOGONUM. The lower part of the stem forms a subterranean tuber, usually considered as part of the root, about the size of a hazel nut, from the bottom of which the fibres forming the actual root proceed. From the upper part of the tuber spring about 4 leaves, with long petioles, the limb pinnately subdivided into 5 to 8 sets of segments, the uppermost generally in pairs, the others in fours and so arranged as to be semi-verticillate and nearly cruciate, giving the leaf a compound appearance; The segments cuneate, with the summits divided into 2 to 3 acute teeth, the terminal one largest and more divided, glabrous, glaucous-green, and mostly with a pale transverse band of purple. The scarious stipulæ at the base of the petiole are concealed beneath the ground. SCAPE branched, longer than the leaves, somewhat corymbose; each pedicel rising from the axil of a blunt scariose bract, one-flowered. FLOWER golden yellow. SEPALS (in this specimen) 4 of unequal size, ovato-lanceolate, very caducous, somewhat coloured. PETALS 6, obovate,

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REFERENCE TO THE DISSECTIONS.

1, A Flower bud. 2, A transverse section of it; shewing the æstivation of the parts. 3, Petal. 4, Back of stamen. 5, Front of ditto. 6, Ditto with the valves of the anther open. 7, Pistil. 8, Section of ovary, shewing 2 ovules inside.

eroso-truncate, with short claws, on the inside of which near the base is a nectariferous pore. Stamens 6, with short filaments; the anthers adnate, 2-celled, each cell bursting inwardly by a valve opening upwards. Pistil with a membranous one-celled ovary, the style short, laterally attached. Stigma dilated and crisped at the margin. Ovules (in this specimen) 2, erect, attached by funicular chords to a pedicellate receptacle. *J. S. Henslow.*

Popular and Geographical Notice. This plant is found in the corn-fields of Greece and Asia Minor, and was noticed by Rauwolf so long ago as the year 1573 as the "true Chrysogonum" of Dioscorides. He describes it in a chapter of his travels the title of which it is thus given in the translation by Ray. "A short and plain relation of plants which I gathered during my stay at Halepo, in and round about it, not without great danger and trouble, which I glued upon paper very carefully." We believe that no figure of it has been published within the last century, but it has been represented five or six times in the rude cuts of the early botanists between 1582 and 1714. Meyen has separated this species from the rest of the Genus, under the name of Bongardia Rauwolfii, on account of the want of the scale on the inside of the petals, and the dilated stigma. But we are unwilling to admit the validity of the former as a sufficient generic character, since a similar circumstance takes place in the genus Ranunculus; and we are not sufficiently impressed with the importance of the latter to consider it worth while to subdivide so small a genus as Leontice from this alone.

Introduction; Where grown; Culture. This specimen flowered last March (1837), in the Botanic Garden, Cambridge, where two of the tubers had been sent the previous August by Mr. Hunneman, with a note that they were the "Bongardia Rauwolfii, from Persia; made use of by the natives as an edible vegetable." It grew about six inches high, and should be potted in a sandy compost. A cool part of the greenhouse is better suited to its early habit of vegetating than the cold frame.

Derivation of the Names.

Leontice, λεοντικη, a classical name of some plant; adopted by Linneus instead of the ancient name of this species, Leontopetalum. Chrysogonum, χρυσος gold, γονυ the knee, where bright yellow flowers spring from the fork or knees of the stem, scarcely applicable in the present case.

Synonymes.

We can refer to no modern figure of this plant. Morrison: Plantarum historia universalis, Vol. II, Sect. 3, tab. 15, fig. 7. give a rude representation of it.

Mimulus roseo-cardenalis.

Mrs Withers del.

MIM'ULUS RO'SEO-CARDINA'LIS.

HODSON'S HYBRID MIMULUS.

EXOGENÆ, OR DICOTYLEDONEÆ.

{ Natural division to which this Plant belongs }

NATURAL ORDER, SCROPHULARIACEÆ.

COROLLIFLORÆ, OF DECANDOLLE.

{ Artificial divisions to which this Plant belongs. }

DIDYNAMIA, ANGIOSPERMIA, OF LINNEUS.

No. 51.

GENUS. MIMULUS. *LINNEUS.* CALYX prismaticus. COROLLA subcampanulata, limbo bi-tri-lobato, lobis subæqualibus. STIGMA bilamellatum. Dissepimenta latéribus placentifera. *SPRENGEL.*

HYBRID. MIMULUS ROSEO CARDINALIS. *HENSLOW.* CAULE erecto, laxe ramoso, piloso. FOLIIS ovatis dentatis, basi connatis. FLORIBUS axillaribus, pedunculis subæqualibus, calyce costato quinque dentato. COROLLA superné acuta, bilabiata, labii superioris laciniis sub-planis.

CHARACTER OF THE GENUS, MIMULUS. CALYX prismatical. COROLLA somewhat campanulate, two or three lobed, lobes nearly equal. STIGMA of two plates or lamellæ. Dissepiments placentiferous at the margins.

DESCRIPTION OF THE HYBRID MIMULUS, ROSEO-CARDINALIS. At first sight, this Hybrid might be mistaken for a large and luxuriant form of Mimulus Roseus, with flowers nearly twice the size usually attained by those of that plant; but a careful comparison of it with Mimulus Cardinalis (see Botanist, No. 2) and Mimulus Roseus, shews that it possesses many characters which place it intermediate between these species. In general habit it approaches most closely to Cardinalis, but the colour of the flowers, though of a darker tint, is nearly the same as in Roseus.

The whole plant is covered with soft, glandular, and spreading pubescence. STEMS, three feet or more, with flowering branches for about two-thirds of its height, (as in Cardinalis; whilst in Roseus the branches are more sparingly produced, and the stem frequently nearly simple) LEAVES ovate, toothed, (more downy and more toothed than in Roseus; of a darker green, plane, and not inflexed, as in Cardinalis). INFLORESCENCE axillary, the peduncles about the same

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REFERENCE TO THE DISSECTIONS.

13. 1, The Corolla laid open, shewing the four didynamous stamens attached to its base.
2, The Pistil

length as the flower. (In Roseus they are generally rather shorter, and in Cardinalis much longer) CALYX pentangular, five-toothed, (exactly intermediate between that of Cardinalis and Roseus. In the former, the teeth are about one-fourth the length of the Calyx, and in the latter, about one-sixth; whilst the angles in the sinuses of the former are acute, and in those of the latter, right angles), spotted, with purple above, but only faint traces of spots below. (In Cardinalis the purple spots are distinct above and below; but in Roseus, there are faint spots on the upper side only). COROLLA. Tube distinctly longer than the Calyx, (In Cardinalis it is scarcely longer, and in Roseus, distinctly longer), laterally compressed, and somewhat angular, or sub-carinate above, with three lobes or folds below (In Cardinalis it is still more compressed, and sub-carinate, both above and below. In Roseus it is not at all compressed, convex above, and with three folds below). Limb bilabiate; the upper lip composed of one notched erect lobe, of which the laciniæ are very slightly reflexed. (Much the same in Roseus; but in Cardinalis the laciniæ are completely bent back, so that their edges are brought close together). The lower lip has three spreading lobes, of which the lowermost is largest, and emarginate, and all are somewhat reflexed at the margins, which are slightly laciniate, and clothed with villose ciliæ. (In Cardinalis, the margins are much more reflexed, irregularly laciniate, and have ciliæ only towards the bottom of the sinuses. In Roseus, the margins are even, and nearly like those of the Hybrid. Throat bearded along two longitudinally disposed lines, with the intermediate space tomentose). In Roseus much the same; but in Cardinalis the beard is composed of shorter and more succulent hair). Colour of a deep pink, with purple spots in the throat, some of which are more or less confluent in longitudinal lines. (In Roseus, the colour is paler, the spots more distinct; whilst in Cardinalis, the colour is scarlet, and the spots more confluent, and forming several distinct lines). STAMENS didynamous, attached to the base of the Corolla; the superior pair, a little shorter than the inferior. The inferior pair slightly exserted; whilst in Roseus they are just inserted. Filaments with a few purple spots; connective succulent. PISTIL. Ovary cylindric, shorter than the style. (In Cardinalis the style is about three times, and in Roseus twice as long as the ovary). The style reaching beyond the stamens, compressed towards the summit, and dilating into a bilabiate stigma. The style and stigma remain green for a long time, and when they

wither, the ovules in all the specimens we examined turned brown and withered also; whereas, in both the parent species (as in other fertile plants) the ovules begin to swell as soon as the stigma withers.

Popular and Geographical Notice. A regret has sometimes been expressed at the production of hybrid plants, because they introduce a certain degree of confusion and difficulty into our technical descriptions and systematic arrangements. But surely the searcher after truth, the philosophical investigator of the works of nature, must greatly rejoice at every fresh and striking result (however embarrassing for the moment) which has been obtained by the judicious application of a direct experiment. The more our experiments are multiplied, and the more precautions we take in securing the accuracy of our results, the greater will be our chance of detecting those physiological laws which regulate the variations and restrictions in forms in different species. One remarkable result, observable in the production of hybrid plants, is the uniform manner in which several of them refuse to perfect their seed; and if this character were constant in them all, we should possess an excellent law for distinguishing hybrids from true species. But it is now asserted that many hybrids do perfect their seeds; still an obvious question presents itself, whether we ought not always to consider the parents of such hybrids really to belong to the same species, however dissimilar they may be in external form, whilst the parents of those which do not perfect their seed should be considered to be distinct. The evidence which has hitherto been adduced, militates strongly against the existence of any such law, though we may hardly allow it to be sufficiently complete and definite to have completely settled the question. Besides the existence of certain hybrids which never produce ripe seeds, and of others which readily produce them, there are some which occasionally, but rarely, do so; and such we find to be the case with the present plants. Professor Henslow examined a great many of its ovaries in the Bury Garden, last summer, (1837) in all of which the ovules were abortive, and Mr. Hodson informed him at the time, that no perfect seeds had been produced; but since then we have heard from Mr. Turner, (the gardener in that establishment) that "a few good seeds" have been produced. We shall be anxious to learn whether plants have been raised from these, and if so what are the forms which they assume. May we not ask whether those hybrids which refuse to perfect their seed in one climate, and under the combination of circumstances to which they are now subjected in the present state of the earth's surface, might not

in another climate, and under another combination of circumstances than that at present existing, be rendered productive, and thus be enabled to assume the character of true species. If so, fresh light may be thrown upon the remarkable fact with which geology has made us acquainted, of a succession of perfectly distinct races of animals and vegetables at different epochs of the world's existence, each adapted to some peculiar condition of our planet. Such a succession of different races seems to require us to admit that there must either have been a succession of fresh creations, or else such a marked transition between the forms of existing species and those of their offspring, that we are unable to recognize them any longer as specifically identical. These speculations are fraught with the deepest interest. They serve to impress us with some notions of the infinite distance at which the human understanding lags behind the perceptions of the divine wisdom, and to humble any petty conceits that we might be inclined to entertain of our own limited powers. If there is a certain difficulty even in preparing a mere technical description of the works of creation, as they may be seen and handled by us, how much greater must be those difficulties which we have to surmount, when we seek to enquire into those laws by which the past has been altered into the present state of things; and to trace the means by which organic beings have been framed, altered, and adapted to the several changes to which the earth has been exposed. Here we are trenching upon those paths of wisdom which possibly we shall never in this life be able to penetrate to any great extent; and of which we must remain content to believe that "God (alone) understandeth the way thereof, and he knoweth the place thereof. For he looketh to the ends of the Earth, and seeth under the whole heaven." Job, 28 ch. 23 v.

INTRODUCTION; WHERE GROWN; CULTURE. This showy plant may be considered as a decided improvement upon the Mimulus Roseus. It was obtained from the seeds of a plant of that species, which had been fertilized by pollen from Mimulus Cardinalis. Many specimens were raised in the Botanic Garden of Bury St. Edmunds, which all resembled each other, and flowered for the first time, during the summer of 1837. We are indebted to Mr. Hodson, the diligent and intelligent director of the Garden, for the specimen here figured.

DERIVATION OF THE NAMES.

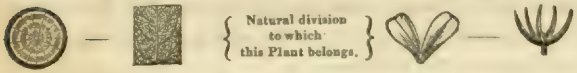
MIMULUS, from *μιμω* MIMO, a monkey, in allusion to the seeds, which resemble the face of this animal. ROSEO-CARDINALIS, a distinctive term, compounded of the names of the two parent species. See the article, No. 385, Potentilla atro-sanguinea-pedata, in Maund's Botanic Garden.

Ipomæa rubro-cærulea.

IPOMÆ'A RU'BRO-CŒRU'LEA.

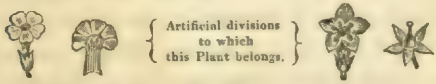
REDDISH-BLUE IPOMÆA.

EXOGENÆ, OR DICOTYLEDONEÆ.



NATURAL ORDER, CONVOLVULACEÆ.

COROLLIFLORÆ, OF DECANDOLLE.



PENTANDRIA, MONOGYNIA, OF LINNEUS.

No. 52.

GENUS. IPOMÆA. *JACQUIN.* CALYX 5-partitus, nudus. COROLLA campanulata vel infundibuliformis, 5-plicata. Ovarium 2-3-loculare, loculis dispermis. STYLUS indivisus. STIGMA capitatum, 2-3-lobum. CAPSULA 2-3-locularis. *ROBERT BROWN.* Prodromus Floræ Novæ Hollandiæ.

SPECIES. IPOMÆA RUBRO-CŒRULEA. *HOOKER.* Glabra, foliis longe petiolatis profunde cordatis brevi-acuminatis. PEDUNCULIS 3-4-floris incrassatis subracemosis. CALYCIS glabri laciniis (parvis) erectis appressis lineari-subulatis albo-marginatis. COROLLA ampla infundibuliformis, limbo 5-angulato angulis mucronatis, stigmate bilobo. *HOOKER.* Botanical Magazine, folio 3297.

CHARACTER OF THE GENUS, IPOMÆA. CALYX 5-parted, naked. COROLLA campanulate or funnel-shaped, 5-plaited. OVARY 2-3-celled, cells 2-seeded. STYLE entire. STIGMA capitate, 2-3-lobed. CAPSULE 2-3-celled.

DESCRIPTION OF THE SPECIES, IPOMÆA RUBRO-CŒRULEA. STEM twining, smooth, tinged with purple, with rounded herbaceous branches. LEAVES alternate, membranous, light-green, markedly cordate, having a deep sinus at the base, shortly but acutely pointed, entire, wavy, veined, petiolate; petioles about equal in length to the leaves. PEDUNCLES axillary, 2 or 3-flowered. INFLORESCENCE somewhat racemose, pedicels thicker than the petioles of the leaves. CALYX 5-parted, segments small, erect, adpressed, lineari-subulate, of a brownish purple colour, with a whitish margin. COROLLA, before expansion, white at the base, becoming red towards the upper part, but when the flower is fully expanded, changing to a fine purplish or blue colour, 5-angled, 5-plaited; angles mucronate. STAMENS 5; filaments unequal in length, hairy at the base, attached to the lower part of the tube. ANTHERS oblong, yellow. OVARY oblong. STYLE slender. STIGMA 2-lobed.

POPULAR AND GEOGRAPHICAL NOTICE. The present species, which is regarded as one of the finest of the genus, is a native of Guanaxuato, in Mexico. The disposition which it possesses in common

with many species of the tribe, to extend itself by climbing, is but imperfectly displayed in our stoves, compared with the freedom of range which it enjoys in its own country. One species of Convolvulus an allied genus in the Caraccas was trained 5,000 feet in six months; which shews the extraordinary activity of the vital principle, when stimulated, and ministered to, by the intense power of physical agents within the tropics. The change of colour which is observed in the flower of this and many other plants, is one of the most curious and interesting phœnomena, effected by the chemistry of nature. However varied the hues or brilliant the colours of flowers may be, there is originally no difference between these parts and the most unadorned portion of the plant: "for such colours do not exist in their primitive state, but are communicated, as it were, to vegetation, by its own act. The tissue of plants is in itself completely colourless, of a silvery white (as may be seen in the pith of the elder, or petals of the white camellia), or of an exceedingly pale yellow; the matters contained in the cells, are with a few exceptions, of the same hue: but all is changed, when they are once exposed to solar light." The sunlight enables them to decompose carbonic acid, and form a peculiar principle called chromule, which has the property of combining with variable quantities of oxygen. "It is therefore probable that all the various colours of flowers with the exception of certain special cases, depend in general upon the various degrees of oxygenation of their chromule." See more extended observations on this subject translated from Decandolle, in Library of Useful Knowledge. Botany, p. 120.

INTRODUCTION; WHERE GROWN; CULTURE. The seeds were transmitted from Mexico about 1831, by Mr. Samuel Richardson (an officer of the Anglo-Mexican Mining association) to J. D. Powles, Esq. of Stamford Hill, by whom they were liberally distributed. The plant from which our drawing was made, flowered in the stove of Robert Barclay, Esq. of Layton, Essex; and we were obligingly supplied with specimens of the same variety of a more purple hue, by W. Taylor Copeland, Esq. M.P. of Layton. It requires the usual treatment of the stove species of Ipomæa. Flowers in October.

DERIVATION OF THE NAMES.

IPOMÆA, from Ιπος Convolvulus, and ομοιος similar, from closely resembling the genus convolvulus. RUBRO-CŒRULEA, from ruber, red, and cœrulcus, blue, from the two hues of the flower at different periods of its expansion.

SYNONYMES.

IPOMÆA RUBRO-CŒRULEA. Hooker, in Botanical Magazine, folio 3297.

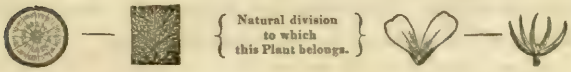
Rondeletia odorata

Mrs Withers del.

RONDELE'TIA ODORA'TA.

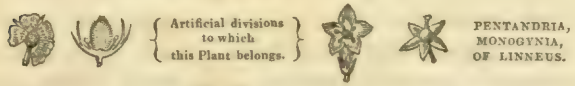
SWEET-SCENTED RONDELETIA.

EXOGENÆ, OR DICOTYLEDONEÆ.



NATURAL ORDER, RUBIACEÆ.

CALYCIFLORÆ, OF DECANDOLLE.



PENTANDRIA, MONOGYNIA, OF LINNEUS.

No. 53.

GENUS. Rondeletia. *Plumier.* Calycis tubus subglobosus, limbus 4-5 partitus, lobis oblongis linearibusve acutis persistentibus. Corollæ tubo cylindrico vix apice subventricoso, limbo patente 4-5-lobo, lobis subrotundis, antheræ 4-5 in apice tubi inclusæ sessiles. Stigma bifidum. Capsula globosa calyce coronata bilocularis, ex apice dehiscens in valvulas 2 sæpius apice fissas, unde sæpè 4-valvis videtur, nunc loculicido-rarius septicido-dehiscens. Placentæ centrales. Semina plurima minima ovato-angulata, sæpè 2 tantum in loculo maturescentia. *Decandolle.* Prodromus Systematis Naturalis Regni Vegetabilis, pars IV, p. 406.

SPECIES. Rondeletia odorata. *Jacquin.* Foliis vix petiolatis ovatis aut subcordatis acutiusculis, suprà sparsè scabris, subtus pallidioribus in nervis tantùm scabris, corymbis terminalibus. Ibid, p. 408.

Character of the Genus, Rondeletia. Tube of the Calyx subglobose, limb 4 or 5 parted, lobes oblong, or linear, acute, and persistent. Tube of the Corolla cylindrical, very slightly ventricose at the apex, limb spreading, 4-5 lobed, lobes roundish. Anthers 4-5, included within the apex of the tube, sessile. Stigma two-cleft. Capsule globose, crowned by the calyx, two-celled, dehiscing from the apex into 2 valves, which are frequently cleft at the top, which gives the appearance as if it were 4-valved. Dehiscence, generally loculicidal, seldom septicidal. Placentæ central. Seeds numerous, ovate, angular, of which often two only ripen in a cell.

Description of the Species, Rondeletia odorata. A Shrub, (in its native country, about 5 feet high), branched, branches round, rugose, the younger ones villose. Leaves opposite, shortly petiolate, ovate, or ovate-elliptical, obtuse, the younger acute, rounded at the base, entire, reticulately veined, the primary veins and middle nerve prominent on the under side, leathery, hispid or rough, with hairs on the upper side, which is of a deep green, the under surface paler,

---

Reference to the Dissections.

1, The Corolla laid open to show the five stamens, inserted within its tube. 2, The Pistil.

and only slightly hairy. STIPULES interpetiolar, ovate, acuminate, pilose, erect, scarcely longer than the petioles. PEDUNCLES terminal and axillary, opposite, disposed in a terminal panicle, which is dichotomous, and villose. FLOWERS shortly petiolate. CALYX superior, five-parted, pilose, segments linear, equal, spreading. COROLLA hypocrateriform, flesh-coloured, externally clothed with silky hair; tube cylindrical, swelling towards the apex, twice the length of the calyx; limb five-cleft, spreading, segments roundish, equal, internally smooth and orange-coloured, throat devoid of hairs. STAMENS 5, inserted into the throat, scarcely protruding. FILAMENTS slender, smooth. ANTHERS oblong-linear, smooth, attached to the back, two-celled, dehiscing by a longitudinal dehiscence. OVARY inferior, somewhat pear-shaped, with silky hairs. STYLE, the length of the tube. STIGMA two-cleft. CAPSULE globose, crowned with the persistent calyx.

POPULAR AND GEOGRAPHICAL NOTICE. All the species which are entitled to rank under the genus Rondeletia, that we are at present acquainted with, are natives of America and the West Indies, with the adjacent Islands. This species is found in Cuba, near the town of Havannah, on bush-covered rocks, near the sea, and occasionally on the naked rock itself. Under the powerful influence of the tropical sun, it evolves a sweet odor, but this, in plants in our stoves, is so faint, as scarcely to be perceptible. An odorous principle is of frequent occurrence in the members of this tribe, of which the beautiful Luculia gratissima, in our preceding number is an instance.

INTRODUCTION; WHERE GROWN; CULTURE. Sent to the Messrs. Loddiges, in 1830, by Wm. Sharpe Mc Leay, Esq. The plant from which our drawing was made, flowered in the stove of the Messrs. Loddiges, at Hackney, in October, 1836. It is entirely a stove plant, and cannot bear exposure to cold, even in summer. In a compost of sandy loam and peat it will grow vigorously. When increase is required, cuttings may be struck in clear white sand, under a bell glass, which should be wiped occasionally.

DERIVATION OF THE NAMES.

RONDELETIA, in compliment to Guillaume Rondelet, a physician, and author of works on Algæ, and Fishes. ODORATA, odorous, from the fragrance of the flowers.

SYNONYMES.

RONDELETIA ODORATA. Jacquin. Stirpes Americanæ, p. 59. Linneus. Species 1, 671. Botanical Register, Folio 1905. Botanical Cabinet.

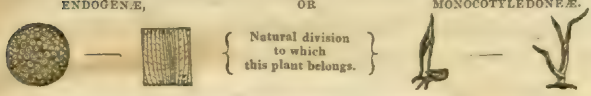
RONDELETIA SPECIOSA, is an erroneous Nursery name.

Cynoches ventricosum

CYCNO'CHES VENTRICO'SUS.

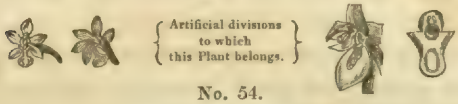
VENTRICOSE CYCNOCHES.

ENDOGENÆ, OR MONOCOTYLEDONÆ.



NATURAL ORDER, ORCHIDACEÆ.

GYNANDROSÆ, OF LINDLEY.



GYNANDRIA, MONANDRIA, OF LINNEUS.

No. 54.

GENUS. Cycnoches. *Lindley.* Perianthium explanatum. Sepala lateralia lanceolata, basi paululum sub labello connata; supremo augustiore. Petala latiora, falcata, decurva. Labellum liberum, ecalcaratum, columnâ continuum, lanceolatum. integerrimum, ungue abrupto calloso. Columna elongata, arcuata, teres, apice clavata, auriculis duabus falcatis ad latera clinandrii. Anthera bilocularis. Pollinia 2, posticè sulcata, subpedicellata, caudicula lineari, glandulâ grossâ. *Lindley*, Genera and species of Orchideous Plants, p. 154.

SPECIES. Cycnoches ventricosus. Sepalis petalisque lanceolatis acuminatis reflexis, labello integro ventricoso acuminato, basi calloso, ungue brevi; columnâ arcuatâ sepalo supremo duplo breviore. *Bateman.* Orchidaceæ of Mexico and Guatemala, pl. 5.

Character of the Genus, Cycnoches. Perianth spread out. Sepals lateral, lanceolate, slightly united at the base under the lip; upper sepal narrower. Petals broader than the sepals, falcate, curved downwards. Lip free, without a spur, continuous with the column, lanceolate, entire, claw abrupt, callous. Column elongated, arched, round, club-shaped at the point, with two falcate auricles at the sides of the clinandrium. Anther two-celled. Pollen-masses two, furrowed behind, on a short pedicel, the tail linear, gland large.

Description of the Species, Cycnoches ventricosus. An epiphyte. Stems about a foot high, fleshy, slightly compressed, producing 5 or 6 lanceolate, acute, plaited leaves, of which the superior are the longest; these, after the flowering season, fall off, when the stem becomes shorter, and more swollen, and then is marked by longitudinal lines, as well as the horizontal contractions at the points whence the leaves fell. Inflorescence racemose; racemes proceeding from the axils of the upper leaves, sometimes two or more at one time, but more frequently in succession; each raceme bears about five flowers, which open simultaneously, and continue expanded about three days. The racemes are at first horizontal, but are afterwards recurved by the

weight of the flowers, which are, consequently, always seen in an inverted position. Flowers of a yellowish green. Sepals lanceolate, acuminate, the upper one being rather narrower, and the lateral ones slightly unguiculate. Petals broader than the sepals, curved downwards. Lip somewhat heart-shaped, very much swollen on the upper side, hollow beneath, of the purest white, communicating with the column by a short claw, which, at its junction with the base of the lip, presents a black callosity. Column round, and club-shaped, only half the length of the upper sepal, and at its extremity bearing two small falcate horns, which guard the anther. Capsule very large, oblong, bearing innumerable minute seeds.

Popular and Geographical Notice. This remarkable plant, "simillima cycno" is a native of Guatemala, and was discovered in the neighbourhood of Istapa, by the indefatigable researches of Mr. Skinner. Frequent as are the resemblances among Orchidaceous plants to some members of the animal kingdom, it was reserved for this genus, to present the likeness of a swan, which is more observable in the Cycnoches Loddegesii, a native of Surinam, than in the present plant. To discover the similarity, it is necessary, in both species, to reverse the flowers, which however is only restoring them to their original position. The observation of these singular forms excites the mind to enquire, what is the object of their formation. This enquiry however, cannot at present end in a satisfactory result, unless we look upon them as designed perhaps chiefly to vary the mantle with which the Author of all has covered the surface of our globe.—

> "For not to use alone did Providence
> Abound, but large example gave to man.
> Of grace, and ornament, and splendour rich,
> Suited abundantly to every taste,
> In bird, beast, fish, winged and creeping thing,
> In herb, and flower."—

Introduction; Where grown; Culture. It was first received in Britain, in 1832, sent by Mr. Skinner, to James Bateman, Esq., of Knipperslay Hall. Our plant flowered in August, 1837, in the stove of Messrs. Loddiges. The mode of culture is the same as for that of Dendrobium, already detailed under No. 5.

Derivation of the Names.

Cycnoches. Swanwort, from κύκνος, a swan, and αὐχην, a neck, in allusion to the graceful curve of the column of this plant, which resembles a swan's neck. Ventricosus. turgid, or swelling, from the swollen appearance of the upper side of the lip.

Synonymes.

Cycnoches ventricosus. Bateman. Orchidaceæ of Mexico and Guatemala, folio 5.

The BOTANIST:

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WITH

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IN THE UNIVERSITY OF CAMBRIDGE.

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"The World seems to have discovered that nothing about which Infinite Wisdom has deigned to employ itself can, properly speaking, be unworthy of any of its creatures, how lofty soever their pursuits and pretensions, may be."

SIR J. E. SMITH.

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1896.

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THE DICTIONARY,

A portion of which is given with each Number of the BOTANIST, as published monthly, forms a separate Volume.

THE GUIDE,

A part of which is likewise annexed to each Number, also forms a separate Volume.

Those portions of the above works originally annexed to the Numbers comprised in this Volume of the BOTANIST, will be delivered with it to the purchaser.

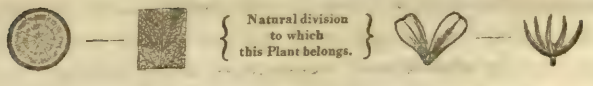
Tweedia caerulea

Mac S. Maurel del.

TWEE'DIA CŒRU'LEA.

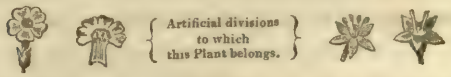
BLUE-FLOWERED TWEEDIA.

EXOGENÆ, OR DICOTYLEDONEÆ



NATURAL ORDER, ASCLEPIADACEÆ

COROLLIFLORÆ, OF DECANDOLLE.



PENTANDRIA, DIGYNIA, OF LINNEUS.

No. 55.

GENUS. TWEEDIA. *HOOKER* and *ARNOTT*. COROLLA rotata, 5-partita: corona simplex, 5-phylla: foliolis ligulatis, integris, apice revolutis, basi auriculatis. GYNOSTEMIUM 5-angulare, pyramidatum. ANTHERÆ membranâ terminatæ. Massæ pollinis ex apice loculi pendulæ, clavatæ, pedicello utroque unidentato; glandula lineari, obtusâ, erectâ, hinc canaliculatâ. STIGMATA acuta. FOLLICULI læves. SEMINA comosa. D. Don, in Sweet's British Flower Garden, folio 407.

SPECIES. TWEEDIA CŒRULEA. *DON*. CAULE volubili, tomentoso; foliis oppositis cordato-oblongis. Ibid.

CHARACTER OF THE GENUS, TWEEDIA. COROLLA rotate, 5-parted; corona simple, 5-leaved, folioles ligulate, entire, revolute at the apex, auricled at the base. GYNOSTEMIUM 5-angled, pyramidical. ANTHERS terminated by a membrane. POLLEN-MASSES pendulous from the top of the cell, clavate, each pedicel one-toothed: gland linear, obtuse, erect, channelled. STIGMAS acute. FOLIOLES smooth. SEEDS comose.

DESCRIPTION OF THE SPECIES, TWEEDIA CŒRULEA. A perennial evergreen plant, with fibrous roots, and herbaceous or somewhat woody twining slender stem, attaining the height of 6 feet, scarcely branching; the whole surface, except the upper lamina of the corolla, clothed with downy whitish hairs. LEAVES opposite, petiolate, cordate, lanceolate, entire, slightly pointed, from one and a half to two inches long, half an inch broad; posterior lobes rounded, approximating or overlapping, upper surface deep green, under lighter. INFLORESCENCE umbellate, interpetiolar, umbels 3-5 flowered. PEDUNCLES longer than the leaves; pedicels slender, about half an inch long, with two awl-shaped bracts at the base. CALYX 5-parted, segments lanceolate, acute, hairy externally, smooth internally. COROLLA rotate, 5-parted, under surface pinkish, upper light blue, the

REFERENCE TO THE DISSECTIONS.

1, Corolla open, showing the segments of the Corona. 2, Seed vessel, two-thirds of its natural size, opened to show the seeds, each crowned by a coma or silky tuft, composed of simple glossy transparent tubes, of various lengths up to 2 inches.

base having five nectariferous cavities; segments elliptico-oblong, scarcely pointed; corona simple, of five segments, which are ligulate obtuse, fleshy, revolute at the apex. Stamens 5, forming a monadelphous tube around the styles; filaments membranous; anthers yellow, terminated by a broad, oval, retuse, membranous appendix. Pollen-masses club-shaped, compressed, amber-coloured, pendulous; each pedicel having a sharp recurved tooth. Gland linear, obtuse, erect, channelled externally, of a chocolate colour, shining, longer than the pollen-masses. Gynostemium 5-angled, the apex prolonged, conical, white; angles blunt, orange-coloured. Ovaries 2, smooth, swelling. Styles short. Stigmas compressed, acute.

Popular and Geographical Notice. This highly ornamental plant was discovered by Mr. Tweedie, at Tucuman, in South America. In addition to the beauty of its flowers, which are displayed from April till August, their colour merits attention, as the hue which they present is of rare occurrence in this tribe, though frequent in the allied one of the Apocynaceæ, (of which the Vinca or periwinkle is an example), yet a similar colour exists in the Marsdenia tinctoria, growing in Silhet, in the East Indies, where it yields an excellent indigo, and it is not improbable that indigo might be procured from this Tweedia. The Gymnema tingens, has also blue flowers, and is used in dying. The Nerium tinctorium, (Röttler), now Wrightia tinctoria (R. Brown), among the Apocynaceæ, is preferable for cultivation in India, as a source of indigo, to any Indigofera, (See Royle's Illustrations of the Flora of the Himalaya, p. 270). Sir W. J. Hooker regards this genus Tweedia as allied to Metastelma; Prof. Don, to Sarcostemma, which last has the corona double.

Introduction; Where grown; Culture. Seeds were sent by Mr Tweedie, in 1835, to Mr. Niven, of the Glasnevin Garden, Dublin, to whom we are indebted, for the opportunity of publishing this desirable novelty, as well as for the following information. "The seeds were sown on a smart bottom heat; I grow it in flat seed pans, filled with sandy loam, and a little peat, trained to a mat trellis in a sunny exposed situation in the stove. The effect of its lovely sky-blue flowers, when so managed is beautiful in the extreme. It may be propagated by seeds or cuttings."

Derivation of the Names.

Tweedia. Justly named in compliment to Mr. Tweedie, its discoverer. Cœrulea, blue, the colour of the flowers.

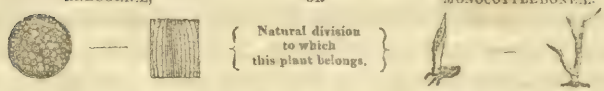
Synonymes.

Tweedia cœrulea. Don, in Sweet's British Flower Garden, fol. 407.
Tweedia versicolor. Hooker, in Botanical Magazine, folio, 3630.

CYPRIPE'DIUM INSIG'NE.

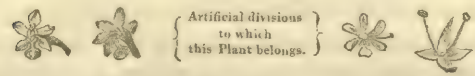
REMARKABLE CYPRIPEDIUM.

ENDOGENÆ, OR MONOCOTYLEDONEÆ.



NATURAL ORDER, ORCHIDACEÆ.

GYNANDROSÆ, OF LINDLEY.



GYNANDRIA, DIANDRIA, OF LINNEUS.

No. 56.

GENUS. CYPRIPEDIUM. *LINNEUS.* Perigonii patentis foliola exteriora lateralia uninervia, labello supposita, libera vel inter se connata, supremum conforme, quinquinerve; interiora angustiora. LABELLUM maximum, inflatum, calceiforme. COLUMNA brevis, cernua, apice trifida, lobis lateralibus subtus antheriferis, intermedio sterili, petaloideo-dilatato. ANTHERÆ loculis discretis subbivalves. POLLEN pulticeo-granulosum. STIGMA deltoideum, columnæ faciem infra antheras occupans. CAPSULA unilocularis, placentis parietalibus tribus. SEMINA plurima, scobiformia. *ENDLICHER.* Genera Plantarum, p. 220.

SPECIES. CYPRIPEDIUM INSIGNE. *WALLICH.* ACAULE foliis cartilagineis ligulatis scapo piloso dimidio brevioribus, perianthii lacinia superiore fornicata emarginata lateralibus obovatis subundulatis obtusis extus pubescentibus, inferiore labello venoso basi inflexo paulo longiore. *LINDLEY.* Collectanea Botanica, t. 32.

CHARACTER OF THE GENUS, CYPRIPEDIUM. The external folioles of the spreading perigone (perianth of some writers) lateral, one-nerved, hid by the labellum (or lip), free or united, the upper uniform, 5-nerved: internal folioles narrower. LIP large, inflated, slipper-shaped. COLUMN short, nodding, 3-cleft at the apex, the lateral lobes antheriferous below, the central one sterile, dilated and petal-like. ANTHERS with the cells distinct, nearly two-valved. POLLEN pultaceously granular. STIGMA deltoid, occupying the face of the column below the anthers. CAPSULE one-celled with 3 parietal placentæ. SEEDS numerous, resembling grains of dust.

DESCRIPTION OF THE SPECIES, CYPRIPEDIUM INSIGNE. Herbaceous, stemless, LEAVES radical, few, equitant at the base, distichous, cartilaginous, ligulate, one half shorter than the flower stem or scape, keeled on the under surface, glabrous, of a yellowish green colour. SCAPE round, pilose, nearly a foot long, curved downwards at the upper part, where it is furnished with an ovately-oblong, green, smooth, compressed spatha. FLOWER terminal, solitary, of considerable size, from 3 to 4 inches wide. Outer segments of the peri-

anth 3, (but apparently only two, the lower being formed of two cohering) broadly ovate, or rounded; the lower entirely green, the upper green, but whitish towards the top, the surface with numerous brown spots. INNER SEGMENTS two, lateral, spreading, oblong, becoming wider towards the extremity, yellowish green, traversed by purple lines, connected by the transverse bars. LIP large, saccate, reddish green externally, internally yellow. COLUMN short, having at its extremity a large lobe, which is yellow, obversely-heart-shaped, and slightly convex, glandular below, covered with minute reddish hairs above: beneath this, towards the base, are two filaments, each bearing one anther. ANTHERS yellow, sessile, two-lobed. LOBES somewhat unequal.

POPULAR AND GEOGRAPHICAL NOTICE. This species of one of the most shewy of the genera of orchidaceous plants, is native of a part of the world, where few of the genus have hitherto been found: Dr. Wallich discovered it in Nepaul, whence Cypripedium venustum was sent by the same botanist, constituting with Cypripedium purpuratum, more recently brought from the Malayan Archipelago, a small tropical section of a genus, the majority of species of which he found in the temperate and colder parts of the northern hemisphere. Even Britain can exhibit one species, Cypripedium calceolus (Ladies' Slipper). Many are found in North America.

INTRODUCTION; WHERE GROWN; CULTURE. It was sent by Dr. Wallich to the late Mr. Sheppard of Liverpool, about 1822. The plant whence our drawing was made flowered in the inexhaustible collection of the Messrs. Loddiges. It grows in a pot of very light sandy peat, placed on a stage. Like many other plants from Nepaul and the more northern parts of India, it by no means requires a high temperature. It may be kept in the conservatory, or even have the pot sunk in the open ground, during the summer months, without endangering its existence, or impairing the freeness of its flowering.

DERIVATION OF THE NAMES.

CYPRIPEDIUM, from *κυπρις* Cyprus, one of the names of Venus; and *ποδιον* podium, a slipper. INSIGNE distinguisher, being one of the most remarkable of the species.

SYNONYMES.

CYPRIPEDIUM INSIGNE. Wallich Mss. Lindley Collectanea Botanica, t. 32. Hooker Exotic Flora, t. 34. Loddiges' Cabinet, t. 1321. Botanical Magazine, t. 3412.

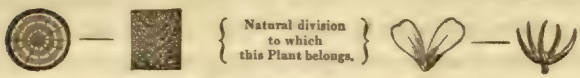
Pezoa pinnata

Hardenbergia monophylla

HARDENBER'GIA MONOPHYL'LA.

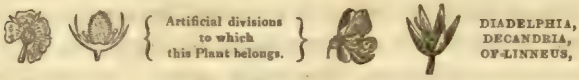
Variety: longiracemosa.

EXOGENÆ. OR DICOTYLEDONEÆ.



NATURAL ORDER, LEGUMINOSÆ.

CALYCIFLORÆ, OF DECANDOLLE.



DIADELPHIA, DECANDRIA, OF LINNEUS.

No. 84.

GENUS. HARDENBERGIA. *BENTHAM.* CALYX campanulatus, breviter quinquedentatus, subbilabiatus. COROLLÆ vexillum orbiculatum integrum vel breviter emarginatum basi exappendiculatum, vix unguiculatum, alis longius. ALÆ oblique obovato-oblongæ. CARINA alis ultra medium adhærens et iis brevior, incurva, obtusa. STAMINA distincte diadelpha; filamento vexillari basi recto inarticulato. OVARIUM pluriovulatum. STYLUS brevis adscendens, lubulatus. STIGMA capitatum subpenicillatum. LEGUMEN lineare, compressum, intus isthmis cellulosis submultiloculare. SEMINA strophiolata. FRUTICES volubiles Australassici sæpius glabri. FOLIA pinnatim trifoliolata vel unifoliolata, foliolis stipellatis. STIPULÆ et bracteæ minutæ, pedunculi axillares, multiflori. PEDICELLI ebracteolati. CALYCES glabri. COROLLÆ cæruleæ vel violaceæ. *BENTHAM* in the Annalen des Wiener Museum v. 2, p. 124.

SPECIES. HARDENBERGIA MONOPHYLLA. *BENTHAM.* FOLIIS unifoliolatis, foliolo lanceolato vel oblongo, basi subcordato, racemis petiolo multo longioribus.

CHARACTER OF THE GENUS HARDENBURGIA. CALYX bell-shaped, with 5 short-teeth, slightly two-lipped. STANDARD of the corolla orbicular, entire or slightly emarginate, without any appendages to the base and with a very short claw, longer than the wings. WINGS obliquely obovate-oblong. KEEL adhering to the wings beyond the middle and shorter than them, curved and blunt at the extremity. STAMINA distinctly diadelphous, the free stamen straight and not articulated. OVARY with several ovules. Style short, ascending, subulate. STIGMA capitate usually with a short tuft of hairs. LEGUME linear, flattened, almost divided into several cells by a cellular substance. SEEDS with a strophiola.

DESCRIPTION OF THE SPECIES HARDENBERGIA MONOPHYLLA. A ligneous climber, smooth in all its parts. BRANCHES slender, rather stiff and somewhat angular. LEAVES alternate. STIPULES membranaceous, brown, ovato-lanceolate, pointed, about 2 lines long. PETIOLES from half an inch to an inch and a half long, bearing a single leaflet, at the base of which are two minute stipellæ. LEAFLET lanceolate or oblong, blunt at the extremity, with a minute point at the end

of the midrib, truncated or somewhat heartshaped at the base, coriaceous and very much reticulated on both sides. RACEMES axillary or terminal, varying much in length, but always considerably longer than the petioles, and many flowered. PEDICELS one flowered, generally two together from the same point, with minute bracteæ at the base, BRACTEOLÆ wanting. CALYX bell-shaped, pale green, with five short teeth, of which the two upper are joined together into a sort of upper lip. PETALS in the ordinary variety of a deep blue, in that now figured of a reddish lilac. STANDARD patent or bent back, nearly orbicular, emarginate at the top, and contracted at the base into a short stalk, marked in the centre with a double green spot. WINGS and keel borne on longer stalks and darker coloured than the standard. LEGUME linear, compressed, smooth, generally about an inch long.

POPULAR AND GEOGRAPHICAL NOTICE. Hardenbergia, a group separated from the old genus Kennedya, contains six species of climbers, all found in extra-tropical Australia, all of them very much alike in general appearance and colour of the flowers, and all highly ornamental from the great profusion of their flowers when under proper treatment, and next to the Zichyas, they form the handsomest of the groups of which the old genus Kennedya consisted, and which are still known under that name in our gardens.

As this dividing of Kennedya may probably be the occasion of a repetition of the complaint against botanists, that they are continually changing the names of plants, it may not be out of place to add here a few remarks on the principles which have guided those who have made really useful changes; and by which, however much they may have been lost sight of by many an aspirant to botanic fame or notoriety, the validity of any proposed alterations should ever be tested.

The name under which a plant was first published, commencing from the time of Linneus, should not be altered except in the following cases:

1. Unless it be preoccupied by another plant.

2. Unless it be the name of a genus to which the plant does not in fact belong.

3. Unless the progress of science render it expedient to divide the genus.

4. It has also been contended by some, that where the name of a plant has been preoccupied by Zoologists it ought to be changed;

but since the great increase in the number of genera, both in Zoology and Botany, has rendered an extensive study of both sciences by the same individual almost impossible, this evil can scarcely ever now be corrected without producing still greater confusion.

5. Others again, without sufficient reason, have proposed to discard certain names because they were contrary to the Linnean canons; and this has been done more especially for the sake of euphony. But this, in the present day, would lead to interminable alterations; for what is considered harsh in one language is often not so in another, and botanical nomenclature is made for the whole scientific world, not for any one nation. Thus the Russian Kraschennisiikovia, the Polish Andrzejowskia, the German Kirsch liegeria, Schwenkfeldia, or Escholtzia, which sound so awful to us, are perfect harmony to their respective authors when compared to our Willoughbeia, Cunninghamia, Sedgwichia, Matthewsia. Changes therefore for mere euphony are to to be deprecated.

It is under the sanction of the third of these cases—viz. the subdivision of genera, that the most frequent alterations are made, and it is here that the imperfection of human capacity will ever lead to variation and uncertainty. Wherever, as the science advances and the number of species increases, the expediency of breaking up a genus is very evident, if undertaken by a competent author, the result of his labour is usually at once adopted, and but little inconvenience follows; but unfortunately, it is now very much the custom for young and inexperienced botanists to commence their career by splitting up old genera into groups, which they establish on arbitrary principles; others then refuse to accede to the alterations, and so every species acquires two or more names, until nothing but confusion ensues, which the true botanist regrets sincerely though the remedy be out of his power.

The subdivision of Kennedya, first proposed in the second volume of the Annals of the Vienna Museum of Natural History and now adopted, was only resolved upon after a careful examination of the greater number of species now known (about 20) and of all those of neighbouring groups which could be obtained, and the result was a conviction that the arrangement would be much more conformable to the principles upon which other Phaseolæ are distinguished, and the genera be much easier understood and defined, if four distinct groups were established, independantly of the Kennedya tabacina, which with the Gly-

cine clandestina, and some others, belongs to a very distinct fifth genus. It will also, it his hoped, be readily admitted that the divisions so formed are easily recognisable without entering into the minutiæ of botanical characters, and are therefore natural; for surely the small blue or somewhat pink flowers in slender branches of Kennedya monophylla, Comptoniana, &c (which are all Hardenbergias) are very different from the large long scarlet or purple flowers of Kennedya Marryattiana, prostrata, nigricans, &c. We confidently trust, therefore, that we shall not, on this occasion, be set down by more able botanists as one of the herd of rash innovators, and that even our lovers of horticulture will not refuse to adopt a name destined at once to do honour to a lady, most zealous in the promotion of botany and horticulture at Vienna, and to her brother whose tour of six years over a great part of the globe, has done much for the advancement of several branches of natural science. G. B.

Introduction; where Grown; Culture. The Hardenbergia monophylla was first introduced from Botany Bay, about the year 1790, since which time it has been increased and become a great ornament to most greenhouses. This very elegant variety of the original plant was raised from New Holland seeds, by Messrs. Rollisson of Tooting, in 1830. The specimen here figured was obligingly supplied from the Birmingham Botanic Garden, where it flowered in March, and had grown to the height of four feet. As may be seen by our figure of this elegant twiner, it is well adapted for ornamenting small columns or a light trellis in the greenhouse. It will grow still more luxuriantly if planted in the border of the conservatory. Sandy loam with a small proportion of peat makes a suitable soil for it, and increase may be obtained from cuttings.

Derivation of the Names.

Hardenbergia in honour of Frances Countess Hardenberg, sister of Baron Charles von Hiigel of Vienna. Monophylla one-leaved, each petiole having in this species but one leaflet, whilst in several others there are three.

Synonymes.

Kennedya monophylla. (Ventenat) Malmaison, t. 106. var. longeracemosa, Botanical Register, t. 1336.

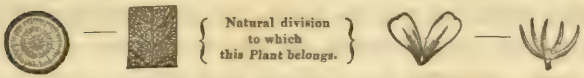
Hardenbergia monophylla. Bentham in Hiigel Enumeratio Plantarum Novæ Hollandiæ, p. 41.

Candollea Cunninghamii.

CANDOL'LEA CUNNINGHAM'II.

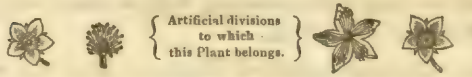
MR. CUNNINGHAM'S CANDOLLEA.

EXOGENÆ, OR DICOTYLEDONEÆ.



NATURAL ORDER, DILLENIACEÆ.

THALAMIFLORÆ, OF DECANDOLLE.



POLYADELPHIA, POLYANDRIA, OF LINNEUS.

No. 85.

GENUS. CANDOLLEA. *LABILLARDIERE.* SEPALA quinque, ovata, mucronata, persistentia. PETALA quinque, obovata aut obcordata. STAMINA numerosa, omnia, vel pleraque plus minusve connata in adelphias plurimas petalis oppositas, subæqualia vel exteriora breviora interdum sterilia filiformia. ANTHERÆ oblongæ. CARPELLA tria ad sex, ovoidea intus dehiscentia, stylo acuminata, oligosperma. SEMINA ovoidea; Albumen carnosum; Embryo minutissimus. SUFFRUTICES erecti vel subvolubiles. FOLIA alterna ad apices ramorum vel in axillis sæpe conferta, integra aut apice dentata, linearia aut cuneata, basi amplexicaulia demum sæpius transversi secta. FLORES flavi ad apices ramulorum solitarii.

SPECIES. CANDOLLEA CUNNINGHAMII. Glaberrima, foliis linearibus integerrimis, floralibus apice nudis, floribus ad apices ramulorum brevissimorum axillarium pedunculatis, petalis late obovatis sepala obtusa vel mucronulata superantibus.

CHARACTER OF THE GENUS, CANDOLLEA. SEPALS five, ovate, mucronate, persistent. PETALS five, obovate or obcordate. STAMENS numerous, all or most of them, more or less connected at the base into several bundles opposite to the petals, nearly equal in size, or more frequently the exterior ones shorter or sterile. ANTHERS oblong. CARPELS three to six, ovoid. ALBUMEN fleshy. EMBRYO very minute.

DESCRIPTION OF THE SPECIES, CANDOLLEA CUNNINGHAMII. A low shrub, perfectly glabrous in all its parts. BRANCHES slender flexuose, and disposed to climb, reddish, smooth and shining. LEAVES alternate, linear, about an inch and a half long, with one nerve, terminated by a little point, no cross veins apparent, the margin entire and a little curved downwards, rather narrowed near the base, and then dilated and clasping the stem, breaking off transversely close to the base, leaving a semicircular scar round the stem. FLOWERING BRANCHES very short and axillary, having the appearance of a small bunch of axillary leaves, from whence springs the peduncle, from an inch, to an inch and a half long, bearing at its summit a single yellow flower. SEPALS five, very much over-lapping each other, green, with whitish edges, and with a bract resembling the sepals, but smaller,

close under them. PETALS five, half as long again as the sepals, nearly as broad as long, and slightly emarginate. STAMENS numerous; the filaments nearly all free to the base, but collected into five bunches, alternating with the ovaria, the inner filaments about twice as long as the oblong anthers, the outer ones much shorter, filiform and sterile. OVARIES five, glabrous, each with two erect ovules, the styles nearly as long as the stamens, with an obtuse slightly capitate stigma. Seeds unknown to us.

POPULAR AND GEOGRAPHICAL NOTICE. That the plant figured under the name of Hibbertia Cunninghamii, t. 3183, of the Botanical Magazine, cannot remain in that genus, without a considerable modification of the generic character is evident, as the stamina of Hibbertia are expressly given as "æqualia" in contradistinction to those of Hemistemma, in which, as in the species in question, the external ones are abortive, and reduced to filiform rudiments. It is not, however, a Hemistemma, as in that genus all the stamina are inserted on one side of the ovaria. The habit and foliage of our plant brings it nearer Candollea, and although the stamina are but very slightly connected together, yet they are distinctly grouped into five bunches, and it may require less change in the character of Candollea, than in that of any other genus to include it, provided the seeds are not essentially different. The pedunculate species of Candollea are very ornamental; they have a further claim to a place in the collection of every lover of botany, from their association with the name of one to whom the science is so deeply indebted; not only for the herculean labour of his "Prodromus" but for the clear, and logical manner in which he has collected, digested, and expounded the principles of botany, in his numerous theoretical works.

INTRODUCTION; WHERE GROWN; CULTURE. The plant figured in the Botanical Magazine, was introduced by Mr. Allan Cunningham, from King George's Sound, to the Royal Gardens at Kew, where it flowered, in 1832. Our drawing was made from a fine specimen in the greenhouse of the Birmingham Botanic Garden, in June. It should be potted in a mixture of peat and loam; and may be obtained from cuttings of the young shoots, which quickly strike root under a bell-glass.

DERIVATION OF THE NAMES.

CANDOLLEA, named by Labillardiere, in honour of Professor De Candolle of Geneva. CUNNINGHAMII, in honour of Mr. Allan Cunningham.

SYNONYMES.

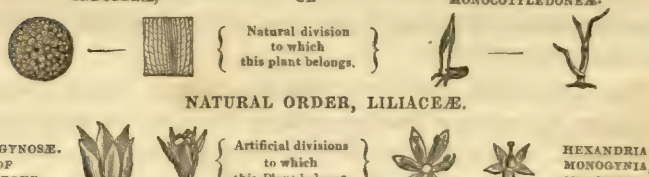
HIBBERTIA CUNNINGHAMIA. Hooker: Botanical Magazine, t. 3183.

Agapanthus umbellatus

AGAPAN'THUS UMBELLA'TUS.

var. Albiflorus.

WHITE-FLOWERED AGAPANTHUS.



No. 86.

GENUS. AGAPANTHUS. *L'HERITIER.* PERIGONIUM corollinum, tubulosum; tubo brevi, limbo sexpartito, æquali, patente. STAMINA sex, basi limbi inserta; filamenta inæqualia, subdeclinata. OVARIUM triloculare. OVULA plurima, biseriata, adscendentia, anatropa. STYLUS filiformis, declinatus; stigma subtrigonum, læve. CAPSULA oblongo-trigona, trilocularis, septicido-trivalvis. SEMINA plurima, adscendentia, plano-compressa; testa membranacea, spadicea, superne in alam producta. EMBRYO minutus, in basi albuminis umbillico proximus. HERBÆ capenses, scapigeræ; radice tuberosa, foliis radicalibus linearibus, florum umbella terminali, spathaceo-bibracteata. *ENDLICHER.* Genera Plantarum, p. 142.

SPECIES. AGAPANTHUS UMBELLATUS. *L'HERRITIER.* SCAPO foliis linearibus longiore, floribus umbellatis, tubo brevissimo. *WILLDENOW.* Species Plantarum, v. II, p. 47.

CHARACTER OF THE GENUS, AGAPANTHUS. PERIGONE of the nature of a corolla, tubular, the tube short, the limb divided into six equal spreading divisions. STAMINA six, inserted in the base of the limb, filaments unequal in length, tending downwards. OVARY of three cells. OVULA several, placed in two rows, ascending, anatropous. STYLE filiform, tending downwards, stigma somewhat three-angled, smooth. CAPSULE oblong, three-angled, three-celled, splitting in the middle of the cells into three valves. SEEDS several, ascending, flat; testa membranaceous, brown, extending on the upper side into a wing. EMBRYO minute, situated at the base of the albumen next the hilum.

DESCRIPTION OF THE SPECIES, AGAPANTHUS UMBELLATUS. ROOT consisting of a bunch of thick fleshy fibres. LEAVES folded at the base, and somewhat bifarious, about a foot long, somewhat obtuse, flat towards the extremity, and varying from half an inch to an inch in breadth in the different varieties. SCAPE erect, shorter, or more frequently longer than the leaves, cylindrical, smooth, bearing at the apex a large umbel of fifteen to forty flowers, enclosed when young in an ovate convolute membranous spatha, which splits into two valves

and falls off as the flower opens. Each peduncle is from one to two inches long, having at its base a linear bract. The flowers vary much in size, from 14 to 18 lines in length, the tube is sometimes 4 or 5 lines long, sometimes split almost to the base, and in colour they vary from an intense blue to white.

The Agapanthus umbellatus, perhaps the only species known of the genus, is a native of the Cape of Good Hope, and has been long in cultivation. It is a great ornament to those gardens where space can be afforded for the larger growing species of tender Cape bulbs. Several remarkable varieties in the size and depth of colour, in the breadth of the leaf, and height of the plant have already been figured, but the present one appears to be both scarce, and as yet unpublished. In the aspect of the plant, and the form of the flowers, it approaches nearest to the narrow-leaved variety figured by Redoute, vol. 7, No. 403, of his Liliaceæ, but there is not any blue in the colour of the flower, and the tube is perhaps more deeply divided. The peduncles in this, as well as in Redoute's No. 403, are generally longer than the corolla, though not perhaps double the length, and this is so variable a character, that unless some differences in the internal structure be found, it is difficult to consider as a distinct species either the Agapanthus præcox, or the Agapanthus multiflorus of Willdenow. G. B.

The Agapanthus, a most valuable plant where, as in the South of France, it can be grown in the open border and treated as a common hardy liliaceous plant, requires in this country the same kind of protection as the generality of Cape bulbs, but is in other respects easy of cultivation, requiring only plenty of room to come to perfection. Our drawing was made by Mr. Linneus Pope, of Handsworth, from a finely flowered plant in the possession of Captain Bennett, of Dudley, whose garden comprises many plants which rank amongst the rarest in cultivation. It is doubtless a seedling variety but of very rare occurrence. Should be planted in loam.

Derivation of the Names.

Agapanthus, from αγαπη agape Love, and ανθος anthos a Flower, in allusion to the loveliness of the flower. Umbellatus, in an umbel, from the arrangement of the flowers.

Synonymes.

Agapanthus umbellatus. L'Heritier: Sertum Anglicum, p. 17. Botanical Magazine, t. 500. Redoute's Liliacees, v. 1, No. 6, and vol. 7, No. 403. Botanical Register, t. 699.

Agapanthus præcox. Willdenow: Enumeratio, p. 353.

Manettia cordifolia

MANETTIA CORDIFO'LIA.

HEART-LEAVED MANETTIA.

EXOGENÆ, OR DICOTYLEDONEÆ.

{ Natural division to which this Plant belongs. }

NATURAL ORDER, BERBERIDACEÆ.

CALYCIFLORÆ, OF DECANDOLLE.

{ Artificial divisions to which this Plant belongs. }

TETRANDRIA MONOGYNIA, OF LINNEUS.

No. 87.

GENUS. MANETTIA. *Mutis.* CALYCIS tubus turbinatus, limbus partitus in lobos tot quot corollini aut dupli, lobulis in sinubus sæpe interpositis. COROLLA infundibuliformis, tubo tereti vel quadrangulo, intus nunc basi nunc ad faucem piloso, lobis quatuor rarissime quinque. ANTHERÆ subsessiles, filamentis usque ad faucem adnatis. CAPSULA ovata, compressa, calycinis lobis coronata, ab apice ad basin septicide dehiscens, mericarpiis cymbiformibus. PLACENTÆ a septo subexsertæ. SEMINA imbricata, subsessilia, peltata, margine membranaceo sæpius dentato undique alata. EMBRYO erectus in albumine carnoso, cotyledonibus foliaceis lanceolatis. HERBÆ suffruticesve volubiles. FOLIA ovato-oblonga aut subcordata. STIPULÆ latæ, breves, acutæ, sæpe cum petiolorum basi concretæ. PEDUNCULI axillares.

SECTION, CALOSIPHON. CALYCIS limbus quadrifidus, *lobulis accessoriis interjectis aut nullis.* COROLLA tetragona, *intus basi pilosa, fauce intus glabra,* limbi lobis reflexis. PEDUNCULI *uniflori.*

SPECIES. MANETTIA CORDIFOLIA. *Martius.* GLABERRIMA vel minute pubescens, foliis ovatis acuminatis basi rotundatis subcordatisve, pedunculis unifloris, corollæ tubo intus basi piloso fauce glabra.

CHARACTER OF THE GENUS, MANETTIA. TUBE OF THE CALYX turbinate, the limb divided into as many lobes as those of the corolla, or twice as many. COROLLA funnel-shaped, the tube terete or marked with four angles, hairy inside either at the throat or at the base, the limb of four or very seldom five divisions. ANTHERS sessile or nearly so, the filaments adnate to the corolla up to the throat. CAPSULE ovate, compressed, crowned by the persistent lobes of the calyx, splitting at the dissepiment into two mericarps. PLACENTÆ projecting from the dissepiment. SEEDS imbricate peltate, nearly sessile on the placentæ, surrounded by a membranous wing, which is often toothed. EMBRYO erect, in a fleshy albumen. COTYLEDONS leafy, lanceolate.

DESCRIPTION OF THE SPECIES, MANETTIA CORDIFOLIA. STEM and branches slender, twining, and, like the whole plant, glabrous in all the specimens both wild and cultivated which we have seen; minutely pubescent, according to Martius. LEAVES on short footstalks, an inch or rather more in length, ovate, acuminate, rounded, or in older plants somewhat heart-shaped at the base. STIPULES

connected with the base of the petioles into a very short broad membrane, sometimes projecting on each side into a short point. PEDUNCLES terminal, but becoming apparently axillary by the elongation of the stem on one side only, about two inches long, slender, ebracteate. Divisions of the CALYX ovate, or lanceolate, varying in size, but usually rather longer than the tube, narrowed at the base, and in each interval is a very small accessary tooth. COROLLA of a rich red, above an inch and a half long, tube narrowed at the base, ample in the upper part, perfectly glabrous, and marked with four angles outside, furnished inside near the base with four longitudinal rows of appressed hairs, throat glabrous, limb of four broad, short, rather unequal and reflexed divisions. FILAMENTS projecting about a line beyond the throat.

POPULAR AND GEOGRAPHICAL NOTICE. This Manettia with the Manettia gracilis, pubescens, and villosa, of Chamisso and Schlechtendal, the Manettia attenuata of Nees and Martius, the Guagnebina ignita of the Flora Fluminensis, v. 1, t. 115, and a Peruvian species, probably new, form a distinct section, differing in several particulars from Decandolle's generic character, which we have modified accordingly. The six or seven species thus separated, are natives of Southern Brazil, Peru, and the Argentine States. The roots of one species at least, are in high estimation among the natives for their medicinal properties, and all are said to be very ornamental, rambling over the shrubs in their native wilds on the skirts of the primitive forests. In our hothouses they certainly are among the most beautiful twiners for training on wire frames; the foliage itself is neat and elegant, and the length of the peduncles enables every flower to project beyond the leaves.

G. B.

INTRODUCTION; WHERE GROWN; CULTURE. The Manettia cordifolia was first raised in this country by Dr. Neill of Canon Mills, Edinburgh, in 1831, from seeds sent by Mr. Tweedie from the neighbourhood of Buenos Ayres. Our drawing was made at Mr. Henderson's, Pine Apple Place, Edgeware Road. Although a stove plant, this Manettia will probably succeed in the greenhouse. We planted it out of doors, against a south wall, early in June, where now, in September, it has attained the height of ten feet, but without promise of flowers.

DERIVATION OF THE NAME.

MANETTIA, named by Mutis and Linnæus in honour of Xavier Manetti, Curator of the Botanic Garden at Florence, about the middle of the last century.

SYNONYMES.

MANETTIA CORDIFOLIA. Martius: Specimen Materiæ Medicæ Brasiliensis, p. 19, t. 7. Decandolle: Prodromus v. IV, p. 363. Botanical Register, t. 1866: Botanical Magazine, t. 3202.

MANETTIA GLABRA. Chamisso and Schlechtendal: Linnæa, v. IV, p. 169.

Dahlia excelsa.

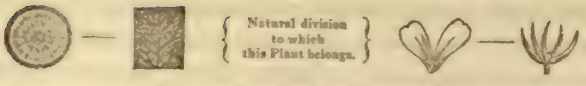
DAH'LIA EXCEL'SA.

var. anemonæflora.

TREE DAHLIA.

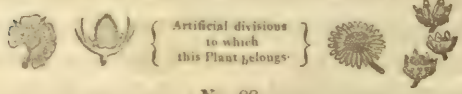
Anemone-flowered variety.

EXOGENÆ. OR DICOTYLEDONEÆ.



NATURAL ORDER COMPOSITÆ.

CALYCIFLORÆ, OF DECANDOLLE.



SYNGENESIA, POLYGAMIA, OF LINNEUS

No. 88.

GENUS. Dahlia. *Cavanilles.* Capitulum radiatum, floribus radii ligulatis fœmineis nutrisve, disci tubulosis quinquedentatis. Involucrum duplex, exterius squamis foliaceis uniserialibus circiter quinque patulis reflexisve, interius squamis duodecim ad sexdecim subbiserialibus longis apice membranaceis basi crassiusculis et inter se coalitis. Receptaculum planum paleaceum, paleis membranaceis oblongis indivisis. Styli rami erecti vel subincurvi, crassi, extus piliferi. Antheræ ecaudatæ, appendiculatæ. Achænium oblongo-obovatum obcompressum epapposum apice obsolete bicorne. Herbæ Mexicanæ grandes. Folia opposita pinnatipartita vel bipinnatipartita. Rami apice mono- vel oligo-cephali. Capitula heterochroma nempe disco luteo, radio purpureo roseo albo aut flavescente. *Decandolle:* Prodromus, v. 5, p. 494.

SPECIES. Dahlia excelsa. Caule perennanti elato pruinoso cavo, foliis bipinnatipartitis, petiolis late connatis, capitulis subcorymbosis, ligulis neutris.

Character of the Genus Dahlia. Flower head radiate, the florets of the ray ligulate, female or neuter, those of the disk hermaphrodite, tubular, 5-toothed. Involucre double, the external consisting of about five spreading or recurved leaflets, the internal of from twelve to sixteen, erect, long, leaflets arranged imperfectly in two rows, membranous at the top, thick at the base and connected together. Receptacle flat with oblong entire membranous scales. Branches of the style erect or slightly curved, thick and bearing hairs outside. Anthers without tails, but with appendages at the top. Achænium oblong-obovate, compressed at the top, without a pappus but obscurely two-horned at the top.

Description of the Species, Dahlia excelsa. Roots fascicled, some perennial, cylindrical, and fibrous, others swelling into tu-

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Reference to the Plate.

The largest outline miniature shows, correctly, the habit of growth of the plant which produced the flower from which our drawing was made. The smaller miniature shows the more branched growth of another plant raised from it. The coloured figure of a leaf is reduced from one taken off the lower part of the large plant. It was thirty inches long, and two feet across the lower pair of secondary petioles.

bers. Stem perennial, very thick, becoming woody, growing to the height of twenty feet and upwards, less branched, and assuming more the aspect of a tree than any other species, hollow inside, smooth and glaucous on the surface, marked with horizontal rings formed by the broad stem-clasping base of the petioles, and sometimes emitting near the base a great quantity of fibrous roots. Leaves opposite, attaining the length of two feet and a half, by about two feet in breadth, doubly pinnatipartite, the general petioles broadly connate round the stem, the segments borne on sharp partial footstalks, those of the lower leaves ovate and heart-shaped at the base, those of the upper leaves, especially the end ones, often contracted at the base, acuminate, toothed, nearly smooth or with a few short scattered hairs, of a pale glaucous green underneath. Flower heads on long opposite monocephalous peduncles, collected five to eight together in a sort of corymb at the end of the branches, with occasionally a few axillary solitary ones along the stem. Outer involucre consisting of five or six linear spreading foliaceous squamæ, the inner one of about twelve, oblong, obtuse, erect, membranous ones. Florets in the specimen we have seen all altered from their natural state, so as to give to the head of flowers the form known in other Dahlias by the name of anemone-flowered. The florets of the ray appear to be nearly in their ordinary state, and to be naturally neutral and sterile, those of the disk are shorter but all converted into irregularly formed semi-ligulate sterile florets having lost their original colour to assume that of the ray. All traces of the organs of fructification are obliterated in all the florets.

Popular and Geographical Notice. The genus Dahlia contains three published species, one of them, the Dahlia variabilis, is the origin of those innumerable varieties which for some years past have formed the chief ornament of our gardens at the close of the summer. Another species, the Dahlia coccinea, has also been for some time in cultivation, and is a desirable plant, on account of the rich colouring of the ray, although its flowers seldom become double, and what is remarkable, it cannot be made to intermingle with the common Dahlia variabilis, so as to form hybrids. This circumstance, together with the different nature of the florets of the ray, which are neuter in the one, whilst they are female and fertile in the other, would in the case of other Compositæ be considered as sufficient to separate them into different genera. There is, indeed, nothing but this same character, derived from the florets of the ray, which distinguishes the whole series of Coreopsideæ

from the Verbesineæ; and it was Linneus's mark of distinction between his orders Polygamia superflua and Polygamia frustranea. Yet the resemblance between the several species of Dahlia is, in other respects, so great, that it has never occurred to any botanist, not even to Cassini, who availed himself of every perceptible modification to make genera in Compositæ, to propose their separation; nor could it be done without laying aside all idea of natural genera.

The Dahlias are all natives of the mountainous districts of Mexico, where the present species had probably been discovered some years ago, as it appears to have long been cultivated in the Botanic Garden of the City of Mexico. It may possibly be the same as the Dahlia gigantea, mentioned by Bullock in his List of Plants procured from that establishment, but no mention of it is to be found in the Nova Genera of Humboldt and Kunth, nor in any of the writings of Spanish botanists, to whom the plants of the Mexican garden were usually transmitted.

G. B.

Introduction; Where grown; Culture. The Dahlia excelsa was first introduced to this country about the year 1830, in a manner somewhat unintentional. Messrs. Loddiges of Hackney perceiving that some thick stakes which were used to protect a basket of plants, received by them from Mexico, showed signs of life, planted them in the open ground, where they grew to the height of ten feet in the first season, but were destroyed in the subsequent winter. The plant was again imported both by roots and cuttings, in 1834, by William Bates, Esq. who presented it to Charles Tayleure, Esq. of Toxteth Park, near Liverpool, by whom it was liberally distributed to the Liverpool Botanic Garden, and to Mr. Skirving of Walton nursery, near Liverpool. From the latter admirable and liberally-conducted establishment, a plant two feet high was obtained by George Ellins, Esq. of Rigby Hall, Worcestershire, and planted in the border of his conservatory, in the spring of 1837. In November of the same year it had attained the height of twelve feet, and produced a handsome corymb of flowers at the summit of the stem, in the manner represented by the largest of the two miniature outline sketches in our plate. From one of these flowers our drawing and description was made. This handsome plant, 12 feet high, wholly devoid of side shoots, but with its magnificent foliage, spreading five feet from side to side and displaying a single spreading crown of flowers, was highly attractive. The very handsome style of growth of this individual plant does not, however,

appear to be invariable, nor perhaps general, in the Dahlia excelsa; for we have since seen other younger plants with many branches, but still preserving a main or leading shoot, in a manner wholly distinct from the garden species. This habit is represented by our smaller outline sketch. A plant now growing in the greenhouse of the Liverpool Botanic Garden, where it has been about three years, has attained the height of twenty feet, but although a few buds have appeared, it has not perfected any flowers. In its native country it grows thirty feet high, and if productive of numerous flowers, must indeed be an object quite worthy of the contemplation of the most zealous Dahlia fancier. Mr. Shepherd of the Liverpool Botanic Garden informs us that Mr. Bate, to whom this country is indebted for the species, possesses dried Mexican specimens of the flowers, both single and double, which were produced by the same plant; we may therefore conclude that it possesses a sportive character similar to that of its congener, now so well known and admired by every person even of the most obtuse perception in floral affairs.

In the "Botanic Garden," No. 166, being that which will appear on the same day as the number of the Botanist, which we are now writing, we have published the Tree Violet. This has much the same relation to the gay Pansy, Viola tricolor, as the Tree Dahlia has to those brilliant objects of cultivation, the Dahlia variabilis. The observations there advanced on hybridizing the two species of Violet are equally applicable in the present instance to the Tree and Garden Dahlia; since by a mixture of them stamina may possibly be given to the weaker, or a habit of free flowering to the stronger. However uncertain may be the result, it is highly desirable that the experiment be made. To obtain this gigantic species of Dahlia in perfection we have no doubt but preference should be given to planting it in the border of a lofty conservatory, not near any wall, but where it can enjoy the full influence of the light, and spread without obstruction from other plants. It may be easily increased from cuttings.

Derivation of the Names.

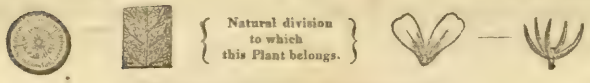
Dahlia, named by Cavanilles, in honour of Professor Dahl of Copenhagen, a contemporary of Linneus, whose chief botanical work appears to have been a small pamphlet, containing some supplementary observations on a few Linnean genera; a splendid compliment to a man of little note when compared to the uninteresting or obscure genera dedicated to many of our modern botanists of first-rate talent. Excelsa, tall.

Chorizema cordatum

CHOROZE'MA CORDA'TUM.

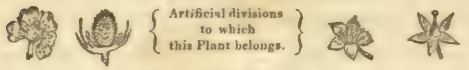
HEART-LEAVED CHOROZEMA.

EXOGENÆ, OR DICOTYLEDONEÆ.



NATURAL ORDER, LEGUMINOSÆ.

CALCIFLORÆ, OF DECANDOLLE.



DECANDRIA, MONOGYNIA, OF LINNEUS.

No. 89.

GENUS- CHOROZEMA. *LABILLARDIERE.* CALYX ad medium vel brevius bilabiatus, labio superiore lato breviter bifido, inferiore tripartito. COROLLÆ vexillum alis vix longius, rotundatum emarginatum vel bifidum. ALÆ oblongæ basi angustatæ. CARINA alis brevior, ventricosa, obtusa. STAMINA libera, filamentis glabris. OVARIUM sessile vel breviter stipitatum, dense pluriovulatum. STYLUS brevis, uncinato-recurvus, glaber. STIGMA obliquum vel subrectum, tenue vel capitatum. LEGUMEN ovatum, sessile vel subsessile, turgidum, intus nudum. HERBÆ suffrutices, fruticesve. FOLIA alterna vel sparsa, simplicia, coriacea, sæpius glabra. STIPULÆ parvæ, subulatæ. INFLORESCENTIA racemosa vel axillaris, axillis floridis in racemum terminalem foliosum approximatis. PEDICELLI bibracteolati. FLORES rubri vel aurantiaci. *BENTHAM:* Annalen des Wiener Museums, v. 2, p. 74.

SPECIES. CHOROZEMA CORDATUM. FOLIIS cordato-ovatis margine leviter sinuato-dentatis subspinoso-ciliatis, racemis terminalibus plurifloris laxis, labiis calycinis tubo æquilongis.

CHARACTER OF THE GENUS, CHOROZEMA. CALYX split to the middle or not so deep into two lips of which the upper one is broad and shortly two-cleft; the lower one deeply three-cleft. STANDARD scarcely longer than the wings, round, emarginate or two-cleft. WINGS oblong, narrowed at the base. KEEL shorter than the wings, ventricose, blunt. STAMENS free, the filaments smooth. OVARY sessile or born on a short stalk, with several ovules. STYLE short, hooked, smooth. STIGMA oblique or nearly straight, slender or capitate. POD ovate, sessile or nearly so, swollen, without any pithy substance inside.

DESCRIPTION OF THE SPECIES, CHOROZEMA CORDATUM. A slender shrub perfectly glabrous, except a few small appressed hairs on the younger branches, much branched and more leafy than the other species. LEAVES borne on short foot-stalks, ovate, obtuse, sinuately toothed on the margin, each tooth bearing a rigidly somewhat prickly seta, heart-shaped at the base, coriaceous, with the midrib projecting underneath and strongly reticulate. STIPULES small, subulate. RACEMES terminal, unilateral, slender, 6 to 8 flowered. Each pedicel at

the axilla of a lanceolate subulate bract and bearing, below the calyx, two very small bracteolæ. Flowers of the size of those of Chorozema rhombeum and Chorozema ovatum. Calyx green with a few very small appressed hairs, the upper lip broad. Corolla red, the standard spotted with yellow at the base. Ovary covered with long silky hairs.

Popular and Geographical Notice. The Chorozemas are all natives of the south western portion of Australia from King George's Sound to the Swan River, and by the graceful elegance of their flowers, fully justify the feeling with which Labillardière and his fellow-travellers selected the original species to commemorate their joy on the occasion mentioned below. The ten or eleven species known, have all of them red flowers closely resembling each other in every particular, although the foliage and general aspect divide the genus into two very distinct sections. The Chorozema cordatum is apt to run into leaf, but if well grown it equals any of the species in beauty. G. B.

Introduction; Where grown; Culture. The present species was received by seeds from the Colony of Swan River, by Robert Mangles, Esq. and originally raised in his garden at Sunning Hill, in 1836. Owing to his liberality it is now to be found in many collections. Our drawing was made in the month of April, in the nursery of the Messrs. Lowe of Clapton, where an admirable collection has been made of the choicest plants of recent introduction; some of which we shall notice as soon as their natural habits have been so far ascertained as to enable us to do them justice. The Chorozema cordatum should have greenhouse protection, under which there is not the least difficulty in its management. It succeeds perfectly when potted in sandy peat, mixed with a small quantity of fresh loam. Cuttings of the young shoots strike root very quickly in sand, under a bell-glass.

Derivation of the Names.

Chorozema, M Labilliardiere originally discovered this genus (Chorozema ilicifolium) on the south west coast of New Holland, at the foot of the mountains, in a loamy soil, near a spot where, after having been tantalized with finding many salt springs, his party had just met with an ample supply of fresh water. This welcome refreshment, of which he speaks feelingly in his book, seems to have suggested a name for his plant, which he had properly determined to constitute a new genus. He called it Chorozema, evidently, as I presume, from χορος choros, a dance, or joyful assembly, and ξημα zema a drink in allusion to the circumstance just mentioned. Smith: Transactions of the Linnean Society. v. 9, p. 252. Cordatum from the heart-shaped form of the leaves.

Synonyme.

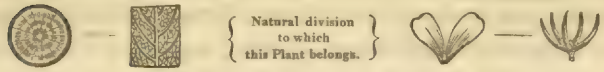
Chorozema cordatum. Lindley: Botanical Register, 1838, t. 10.

Epimedium macranthum.

EPIME'DIUM MACRAN'THUM.

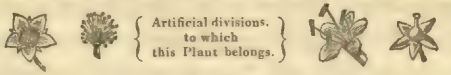
LARGE-FLOWERED EPIMEDIUM.

EXOGENÆ, OR DICOTYLEDONEÆ.



NATURAL ORDER, BERBERIDACEÆ.

THALAMIFLORÆ, OF DECANDOLLE.



TETRANDRIA. MONOGYNIA, OF LINNEUS.

No. 90.

GENUS. EPIMEDIUM. *LINNEUS.* PERIGONII partes oppositæ distichæ quatuor exteriores sepalinæ interioribus discolores, quatuor intermediæ petaloideæ planæ, vel concavæ, quatuor internæ petaloideæ intermediis concolores, cuculliformes calcaratæ. STAMINA quatuor ad basin petalorum interiorum sita. OVARIUM unicum, unilaterale. CAPSULA siliquiformis, polysperma. HERBÆ perennes humiles basi ramosæ, foliis compositis, foliolis serrato-aristatis, paniculis laxis gracilibus foliis brevioribus vel vix longioribus.

SPECIES. EPIMEDIUM MACRANTHUM. Morren et Decaisne. FOLIIS triternatis, foliolis cordato-ovatis, petiolis pilosis, racemis multifloris, sepalis linearibus obtusis, petalis ovato-lanceolatis, exterioribus quam interiorum calcara duplo brevioribus. *LINDLEY:* Botanical Register, p. 1906.

CHARACTER OF THE GENUS, EPIMEDIUM. PARTS of the Perigone opposite, distichous, four outer ones (or calyx) sepaloid, of a different colour from the inner ones, four intermediate ones (petals or outer petals) petaloid, flat or concave, four innermost (inner petals or nectaries) hood-shaped tapering into a spur, nearly of the same colour as the intermediate. STAMENS four, placed at the base of the inner petals. OVARY one, unilateral. CAPSULE siliqua-shaped, with several seeds.

DESCRIPTION OF THE SPECIES, EPIMEDIUM MACRANTHUM. STEMS branched at the base, about nine inches to near a foot high, swollen and reddish at each branching or at the insertion of the leaves, with long reddish spreading hairs. LEAVES twice or usually three times ternate, the leaflets borne on long spreading footstalks, which, as well as the main stalk, are swollen at each insertion, and hairy like the stem; the main stalk has a gland above the lower pair of branch stalks. Each leaflet is about an inch long, heart-shaped, acuminate, sharply toothed, the teeth terminated in a seta, thin, of a light green, quite smooth on the upper surface and slightly hairy underneath, the lateral one very oblique at the base. FLOWERS in terminal panicles, of which the branches are spreading, with few hairs. PEDICELS about half an inch long, one-flowered, thickened under the flower, nearly smooth,

REFERENCE TO THE DISSECTIONS.

1, Hood-shaped inner petal or nectary. 2, Anther. 3, The same after it has burst and discharged the pollen. 4, Section of the Ovary.

with one or two small bracts at their base. Calyx of four oblong pointed deciduous sepals of a brownish colour, about two lines long. Outer petals four, about four lines long, ovate, lanceolate, sharp, white with more or less of a violet tint. Inner petals four, nearly of the same colour, hood-shaped, tapering into a long obtuse spur as long again as the outer petals and yellowish at the extremity, two of them distinctly inserted below or outside the two others. Anthers four, nearly sessile at the base of the inner petals with a small appendage at the top, consisting of two cells opening in valves from the base to the top. Ovary unilateral, oblong, smooth, with many ovules placed in two rows.

Popular and Geographical Notice. The genus Epimedium, as limited by Morren and Decaisne, in an excellent paper on the subject, in the Annales des Sciences Naturelles, vol. 2, second series, comprehends a small number of mountain plants, extending from the southern range of the European Alps, with more or less interruption, to the Japanese islands. The latter country furnishes three species so remarkable from the size of their flowers and especially of the inner petals, as to induce the authors of the above-mentioned paper to include them in a subgenus or section, under the name of Macroceras. The same circumstance renders them all highly deserving of cultivation as ornamental plants in our own gardens as well as in those of the Japanese, in which they are said to bear a conspicuous part. G. B.

Introduction; Where grown; Culture. The Epimedium macranthum was one of about 160 species of plants, which Dr. Siebold brought alive from Japan in hollow pieces of silex filled with clay. It first flowered in the garden of the university of Ghent, from whence it was introduced into this country, with many other valuable plants of the same collection, in 1836. Our drawing was made from a plant which was obligingly sent us by the Messrs. Pope of Handsworth in April last. Subsequently a well-flowered specimen was sent to us by Mr. Atkins, Nurseryman, of Northampton; who states that the plant must be quite hardy, it having been wintered in a cold frame, where the pot of soil in which it grew was thoroughly frozen.

Derivation of the Names.

Epimedium, from a supposition that this was the Epimedium of Dioscorides and Pliny, which it certainly is not, that being described as an ivy-leaved marshy plant without flowers, and of a strong smell. Macranthum large-flowered.

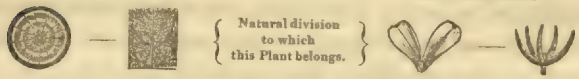
Synonymes.

Epimedium macranthum. Morren et Decaisne: Annales des Sciences Naturelles, Ser. II, v. 2, p. 352, t. 13. Lindley: Botanical Register, t. 1906.

BORO'NIA PINNA'TA.

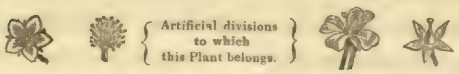
HAWTHORN-SCENTED BORONIA.

EXOGENÆ, OR DICOTYLEDONEÆ.



NATURAL ORDER, RUTACEÆ.

THALAMIFLORÆ, OF DECANDOLLE.



OCTANDRIA, MONOGYNIA, OF LINNEUS.

No. 99.

GENUS. Boronia. *Smith.* Calyx quadrifidus, persistens. Petala quatuor, ovata, persistentia. Stamina octo, omnia antherifera, vel quatuor sepalis alterna abortiva; filamentis ciliatis incurvis. Styli quatuor, erecti, approximati aut intus coaliti. Stigmata quatuor, vel unicum quadrilobum. Carpella quatuor, bivalvia, introrsum connata in capsulam quadrilobum quadriloculare. Semina in loculis subsolitaria, ovata, compressa, embryone gracili tereti, radicula supera. Frutices Australasici. Folia opposita. Pedunculi axillares. Flores sæpius purpurascentes.

SPECIES. Boronia pinnata. *Smith.* Foliis impari-pinnatis glaberimis, foliolis 3-9 linearibus acutis, pedunculis bi- vel trichotomis, floribus octandris.

Character of the Genus, Boronia. Calyx persistent, of four divisions. Petals four, oval, persistent. Stamens eight, either all bearing anthers, or sometimes four alternating with the sepals, abortive, the filaments ciliated and curved inwards. Styles four, erect, adjoining or connected together in one. Stigmas four, or all joined into one four-lobed one. Carpels four, opening inwardly in two valves and connected into a four-lobed four-celled capsule. Seeds usually solitary in each cell, ovate, compressed, with a slender cylindrical embryo, and a superior radicle.

Description of the Species, Boronia pinnata. Shrub, of two or three feet in height, perfectly smooth in all its parts. Branches round or slightly compressed. Leaves opposite, pinnate, the common petiole one to two inches long; leaflets two to four pair with an odd one, articulate on the petiole, linear, pointed and slightly scythe-shaped, somewhat thick and dotted. Peduncles axillary, dichotomous or sometimes trichotomous, many-flowered but seldom longer than the leaves, of a red colour. Bracts, two, small and sharp, at the base of every bifurcation, and two on each pedicel. Sepals ovate, smooth, very small. Petals five or six times as long as the sepals, oval, somewhat pointed, narrowed at the base, spreading, with a minute down on the inside. Stamens eight, all fertile and equal, the

filaments yellow, about a line long, inflexed and bordered with long hairs. Anthers small, two-celled, borne on a very short slender stipes at the top of the filament. Ovary of four carpels connected together and terminated in a very short style with a terminal stigma. One erect ovule in each carpel or cell of the ovary. Capsule smooth, of four carpels. Seeds solitary, black, with the adhering endocarpium white and polished.

Popular and Geographical Notice. Boronia is an Australian genus, comprehending a considerable number of species, natives of different parts of the southern and western coasts, most of them of great beauty. Some of them, and especially the present species, have long contributed to the ornament of our greenhouses, and it were highly desirable that many others, known as yet only from dried specimens, were introduced into cultivation, more especially those from Van Dieman's Land, which in the South of England would probably prove half-hardy. G. B.

Introduction; Where grown; Culture. The Boronia pinnata was first introduced in the year 1795, to the nursery of Messrs. Lee and Kennedy of Hammersmith, and has ever since remained in our greenhouses, but has not always been cultivated with the success which attends the generality of New Holland plants. The chief occasion of this, has been over watering; or exposure, in summer, with other greenhouse plants, to all the rain of the season. To avoid this it should be retained, at all times under glass, be sparingly watered, and have a soil composed of peat and sand, with a very small portion of loam, so loose and pervious as to prevent the possibility of water stagnating about its roots. Attention to these observations, with a good drainage, obtained by the use of a stratum, at least two inches thick of potsherds, or broken tile, will secure success to the cultivator, and yield him the gratification of possessing a lovely little shrub, as odoriferous as beautiful. Cuttings require the same precautions in regard to moisture.

Derivation of the Names.

Boronia, named by the late Sir James Edward Smith, in compliment to Francesco Borone, a young Milanese botanist, who accompanied D. Afzelius to Sierra Leone, and afterwards met with an untimely death by an accidental fall at Athens, whither he had accompanied the late Dr. Sibthorp. Pinnata, pinnate, from the disposition of the leaves.

Synonymes.

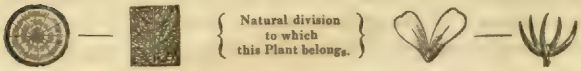
Boronia pinnata. Smith: Natural History Tracts, p. 290, t. 4. Andrews's Botanist's Repository, t. 58. Ventenat Jardin de la Malmaison, t. 38. Botanical Magazine, t. 1763.

Euphorbia jacquiniaflora

EUPHOR'BIA JACQUINIÆFLO'RA.

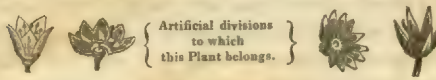
JACQUINIA-FLOWERED EUPHORBIA.

EXOGENÆ. OR DICOTYLEDONEÆ.



NATURAL ORDER, EUPHORBIACEÆ.

MONOCHLAMYDÆ, OF DECANDOLLE.



DODECANDRIA, TRIGYNIA, OF LINNEUS.

No. 100.

GENUS. EUPHORBIA. *LINNÆUS.* FLORES monoici in eodem inv lucro; fœmineus unicus centralis; masculi plures ambientes. INVOLUCRUM commune campanulato-turbinatum, 4-5-fidum, laciniis integris fimbriatisve aut multipartitis, quibus exteriores appendices totidem aut pauciores, carnosæ glandulosæ aut petaloideæ. MASCULI: PEDICELLI plures, singuli cum filamento apice uniantherifero articulati, plerumque infra distincti bracteis interjectis. FŒMINEI: PISTILLUM longius pedunculatum basi nudum aut rarius caliculatum. STYLI tres bifidi, rarius connati in unum apice trifidum. STIGMATA sex, rarius tres, biloba. OVARIUM triloculare, loculis uniovulatis. FRUCTUS capsularis, pedunculo elongato insidens et eodem deflexo nutans, tricoccus, coccis elastice bivalvibus deciduis. PLANTÆ lactescentes, herbaceæ aut fruticosæ, habitu admodum variæ. INFLORESCENTIA axillaris vel terminalis, pedunculis umbellatim vel bi-trichotome ramosis.. *ADRIEN DE JUSSIEU* de Euphorbiacearum Generibus, p. 57.

SPECIES. EUPHORBIA JACQUINIÆFLORA. *HOOKER.* FRUTICOSA, FOLIIS longe petiolatis-oblongo-lanceolatis acuminatis basi angustatis glabris, pedunculis axillaribus subtrichotomis paucifloris, bracteis minutis, involucri laciniis interioribus rotundatis serratis brevibus, appendicibus exterioribus petaloideis subcarnosis coccineis obcordatis rotundatisve integerrimis.

CHARACTER OF THE GENUS, EUPHORBIA. FLOWERS monœcious in the same involucre, one female central one, several males around it. INVOLUCRE bell-shaped or top-shaped, four to five-cleft, the lobes entire, fringed, or divided into several, and outside the lobes are an equal or lesser number of outer ones alternating with them, and of a glandular, fleshy or petaloid consistence. MALE FLOWERS consisting of single filaments, bearing one anther, and articulated upon a very short pedicel, at the base of which is frequently a bract. FEMALE FLOWER: a pistil, borne on a peduncle, either naked or with a little calycule at the base. STYLES three, bifid, or rarely joined in one. STIGMAS, six, or rarely three, bilobed. OVARY trilocular, the cells one-ovulated. FRUIT a capsule, placed on a long peduncle bent downwards, of three cocci, each opening elastically in two valves.

DESCRIPTION OF THE SPECIES, EUPHORBIA JACQUINIÆFLORA. SHRUB, four to five feet high, with slender branches, leafy in the upper part, smooth in all its parts. LEAVES on rather long foot-stalks, all pendant, oblong lanceolate, narrowed at both extremities, strongly

penninerved, of a dark green, paler underneath, the younger ones having often a deep red tint. PEDUNCLES placed in the axils of the upper leaves, at first much shorter than them, but at length nearly equal to them, bearing from three to seven, so called, flowers, (properly involucres.) BRACTS very minute, linear, and scarlet. INVOLUCRES with a bell-shaped greenish tube, spreading into five roundish, or slightly obcordate, bright scarlet external appendages, having the appearance of petals, with a transverse gland at the base of each, and five internal lobes alternating with the external ones, but not projecting beyond the tube, serrated or fimbriate, and buff coloured. Each MALE FLOWER, or at least the outer ones, subtended by a linear ciliated scale, often slightly coloured at the base. FEMALE central flower in our specimens sterile, reduced to a pedicel about a line long, and a short globular empty ovarium, with six abortive stigmas.

POPULAR AND GEOGRAPHICAL NOTICE. Among the several species of this most extensive genus, lately introduced into our stoves, this is one of the most elegant, from the brilliant colour of its involucres, and their long duration. Its country is unknown, but it is probably a native of South America, and evidently very nearly allied to Euphorbia laurifolia, a Peruvian plant, described by Lamarck and Persoon, from Jussieu's herbarium. Judging, indeed, from the descriptions, we should not have hesitated considering the two as identical, were it not for the constant abortion of the female flower in the individuals in cultivation. G. B

INTRODUCTION; WHERE GROWN; CULTURE. The origin of this plant is no further known than that it was sent from the Berlin Botanic Garden a few years since, and has spread itself into the stoves of a number of our principal Horticulturists. Our drawing was made from a specimen in Mrs. Lawrence's collection, which had several times excited the admiration of the visitors to the Horticultural Society's exhibitions in Regent-street; being taken, however, at a rather advanced stage, it represents the flowers more lax, and with fewer leaves than is usually the case when the plant is less advanced in flowering. It requires to be kept in the stove, and should be potted in a mixture of peat, loam, and sand. Cuttings will strike root in sand, under a bell-glass, with bottom heat, but water should not be given them for several days after they are put in, that their juices might be somewhat exhausted, which would otherwise endanger their decay.

DERIVATION OF THE NAMES.

EUPHORBIA, taken by modern botanists from the ἐυφορβιον of Dioscorides, so called, as it is said, because Euphorbus, physician to Juba, king of Mauritania, first made use of that substance derived from a species of Euphorbia. By others it is derived from ἐυ and φορβη, good pasture, though that be not the case with any species. JACQUINIÆFLORA, flowers like those of a Jacquinia.

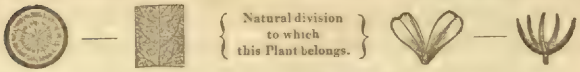
SYNONYME.

EUPHORBIA JACQUINIÆFLORA. Hooker: Botanical Magazine, t. 3673.

ACROPHYL'LUM VENO'SUM.

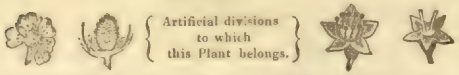
VEINED ACROPHYLLUM.

EXOGENÆ, OR DICOTYLEDONEÆ.



NATURAL ORDER, SAXIFRAGACEÆ.

CALYCIFLORÆ, OF DECANDOLLE.



DECANDRIA, DYGYNIA, OF LINNEUS.

No. 95.

GENUS. Acrophyllum. Calyx liber, regularis, quinquepartitus, persistens. Petela quinque, lineari-oblonga, unguiculata. Stamina decem, disco parvo tenui calyci adnato inserta. Ovarium sessile liberum, hirtum, biloculare, loculis pluri-ovulatis, carpellis facile solubilibus. Styli duo, subulati, glabri, acutiusculi, stigmatibus oblongis, sublateralibus. Fructus. Frutex Australasicus. Folia opposita, simplicia. Stipulæ interpetiolares. Inflorescentia axillaris, umbellato-fasiculata, pseudoverticillata, multiflora.

Character of the Genus, Acrophyllum. Calyx free, regular, divided near to the base into five persistent sepals. Petals five, linear-oblong, clawed. Stamens ten, inserted on a small thin disk, entirely aduate to the base of the calyx. Ovary sessile, free, hairy, two-celled, the cells separating very easily from one another, each with several ovules. Styles two, subulate, smooth, pointed, the stigmas oblong, lateral, at the end of the styles.

Description of the Species, Acrophyllum venosum. Stem shrubby, erect, branched, in the specimen figured about eighteen inches high. Branches reddish, stiff, smooth, with a few appressed hairs in the upper part. Leaves opposite, sessile or nearly so, articulated on the stem, ovate or oblong-ovate, deeply and regularly toothed, smooth, green, and reticulate on the upper side, white, with a very minute pubescence on the other side, the mid-rib and pinnated veins prominent, red and smooth, of a leathery consistence, and somewhat folded on the margin. Stipules lanceolate, deciduous, sometimes concrete. Floral-leaves scarcely larger than the stipules, and similar to them in form. Flowers numerous in the axillæ of the floral leaves, forming a sort of interrupted raceme crowned by a tuft of sterile leaves similar to those of the stem, but at the time of flowering smaller and reddish. In each axilla is a very short, common peduncle subdivided into a great number of red, slightly hairy pedicels, each about a line long. A few small bracts are found at the base of some

Reference to the Dissections.

1 and 2, a Stamen. 3, a single Flower. 4, the same with the Petals and Stamens removed, showing the Calyx and Ovary, 5, the Ovary. 6, a Petal.

of the pedicels. Entire part of the calyx very small, thickened inside into a hairy disk. Divisions of the limb lanceolate, acute, about two-thirds of a line long, smooth, of a delicate pink colour, collapsing, but not falling off after the flowering. Petals white, about twice as long as the calyx, on a longish slender claw, inserted on the disk. Stamens longer than the petals, filaments slender, anthers nearly globular. Ovary short, very hairy, more deeply divided than in the allied genera, each cell containing six or eight ovules. Styles the length of the stamina. Fruit not yet seen.

Popular and Geographical Notice. This plant differs from Weinmannia, to which it has been referred, not only in the essential character of the absence of any other disk than the mere thickening of the base of the calyx, but in the clawed petals, in foliage, which is that of Callicome, in its peculiar inflorescence, and even in geographical station. The true Weinmannias are almost all American, or entirely so if the Weinmannia macrostachya of the Mauritius be nothing more than an American species introduced there by accident or design; for the Weinmannia trifoliata from Southern Africa forms the genus Platylophus of Don, and the New Zealand Weinmannia racemosa belongs to Leiospermum of the same botanist. Acrophyllum on the other hand is a native of extratropical Autralia. Its nearest affinity is without doubt with the Australian genus Callicoma, but it is sufficiently distinguished by the presence of petals, the pluriovulated cells of the ovarium and the inflorescence. Its relation to Caldeluvia of Don, or Dietericia of Seringe, is much more remote, having little more in common with it than with all other Cunonieæ. The quinary instead of quaternary number in the parts of the flower is of little or no importance as a generic distinction. G. B.

Introduction; Where grown; Culture. This very pretty greenhouse plant was raised in the Birmingham Horticultural Society's Garden, from seeds received in the year 1836; and it flowered in June, 1838, in that establishment; where our drawing was made. At the time this was done the plant was only eighteen inches high, but its tufts of delicate flowers made a beautiful appearance. It was disposed of to Messrs. Lucombe and Pince, Nurserymen of Exeter, who now (November, 1838) have it in their possession. Mr. Pince informs us that it succeeds admirably in a cool airy greenhouse, and is likely to ripen seeds.

Derivation of the Names.

Acrophyllum, from the Greek adjective *ἀκροφυλλος*, that has leaves at the top, in allusion to the tufts of leaves, with which the flowering-stems are crowned. Venosum, veiny, from the strongly marked veins of the leaves.

Synonyme.

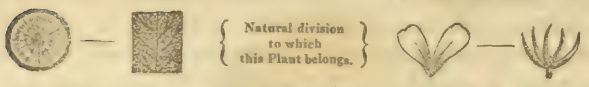
Weinmannia venosa. Floral Cabinet, 81, t. 85.

Aristolochia

ARISTOLO'CHIA CILIO'SA.

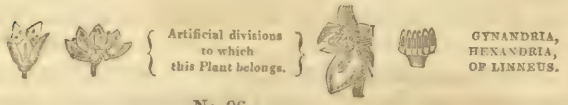
FRINGED ARISTOLOCHIA.

EXOGENÆ. OR DICOTYLEDONEÆ.



NATURAL ORDER, ARISTOLOCHIACEÆ.

MONOCHLAMYDÆ, OF DECANDOLLE.



GYNANDRIA, HEXANDRIA, OF LINNEUS.

No. 96.

GENUS. Aristolochia. *Linneus.* Flores hermaphroditi. Perigonium coloratum tubulosum, tubo inferne cum ovario connato, supra ovarium ventricoso, recto vel curvato, limbo obliquo, ligulato, nunc bi-trifi lo. Stamina sex, disco epigyno inserta; filamenta brevissima, subnulla; antheræ extrorsæ, biloculares, dorso stylo adnatæ. Ovarium inferum, sexloculare. Ovula plurima, loculorum angulo centrali uniseriatim affixa, horizontalia, anatropa. Stylus brevis; stigma radiato sexpartitum. Capsula coriacea, nuda, sexlocularis, septicido sexvalvis. Semina plurima, bracteata; testa coriacea, membranaceo-marginata, raphi lata, fungosæ suberosa, infera, in chalazem apicalem impressum desinente. Embryo in basi axeos albuminis dense carnosi vel cornei minimus, radicula centripeta. Herbæ vel frutices, erecti, prostrati vel scandentes. Folia alterna. Pedunculi axillares. *Endlicher*: Genera Plantarum, p. 345.

SPECIES. Aristolochia ciliosa. Scandens, glabra, foliis exstipulatis integris cordato reniformibus margine crispatis, pedunculis unifloribus, perigonii tubo basi oblique ventricoso a medio ad apice porrecto recto cylindrico sub æquali limbo integro orbiculato patente margine ciliis longis fimbriato.

Character of the Genus Aristolochia. Flowers hermaphrodite. Perigon coloured, tubular, the tube connate with the ovary at the base, swelled above the ovary, straight or curved, the limb oblique, ligulate or two or three-lobed. Stamens six, inserted upon an epigynous disk; filaments very short or none; anthers opening outwards, two-celled, adnate by their back to the style. Ovary adherent, six-celled. Ovules several, fixed in single rows to the central angle of each cell, horizontal, anatropous. Style short; stigmas radiating in six divisions. Capsule coriaceous, six-celled, splitting into six valves at the dissepiments. Seeds several, bracteate, the testa coriaceous, with a membranous border; raphis broad, corky at the base of the seed and terminating at the apex in an impressed chalaza. Embryo very small at the base of the fleshy or horny albumen.

Description of the Species, Aristolochia ciliosa. Stem climbing, perfectly smooth, as well as the rest of the plant. Stipules none. Leaves petiolate, reniform, deeply indented at the base, entire

but slightly crisped on the margins, of a bright green, above pale and marked with prominent veins below. Peduncles one-flowered, nearly as long as the leafstalk, spreading, the ovary incurved and ascending. Perigon hanging in the lower part which is inflated, obliquely-ovate, about half an inch long, it then suddenly ascends in the form of a cylindrical straight entire tube, about half an inch long, at the top of which it spreads into flat orbicular limbs eight or nine lines broad, fringed round with a number of bright yellow ciliæ tipped with purple; the outside of the perigon is of a pale yellowish green, slightly striped with purple, the inside of the swelled part of a pale yellow, and somewhat downy, with a purplish ring near the base, the tubular part has a few hairs near its base and is smooth and purplish towards the top, the limb is of a rich purple near the base and then beautifully reticulated with a bright greenish yellow on a purple ground. Anthers almost sessile, oblong, two-celled, the cells pointed at the top, bursting outwards longitudinally, adnate by the back to the fleshy rays of the style which are lanceolate, pointed, rather longer than the anthers, and bears the stigmatic surface along the margins on the outside.

Popular and Geographical Notice. Among the great variety of extraordinary forms which the perigon of the Aristolochiæ assume in the warmer parts of America, this is by no means one of the least curious. Though the flowers are not in sufficient abundance, nor project enough beyond the leaves to make much show, yet the beautifully variegated limb, with its elegant fringe, amply repays a close inspection. It is a native of North Patagonia, a country which has of late years, through the laborious exertions of Mr. Tweedie, so much enriched our collections, and which with the neighbourhood of Buenos Ayres, and the southern extremity of Brazil, is now through his means rivaling North California in ornamenting our flower borders. The genus Aristolochia is one of those which may be said to have no special fatherland, as it is found represented by some one of its numerous species, in nearly every tropical or temperate region of the globe, excepting perhaps the southern extremity of Africa. G. B.

Introduction; Where grown; Culture. Seeds of this species were transmitted by Mr. Tweedie of Buenos Ayres, in 1836, to the Glasnevin Botanic Garden, Dublin; where it was raised by Mr. Niven, the talented curator, to whose kindness we owe the opportunity of figuring it. It flowered in the stove, in the autumn of 1837, having been grown in a mixture of sandy loam and peat.

Derivation of the Names.

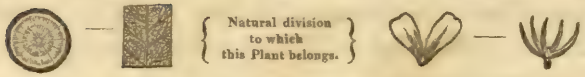
Aristolochia from ἄριστος best, and λοχια parturition, from the supposed medical qualities of some species. Ciliosa with many ciliæ, alluding to the limb of the perigon.

Viparia sphærica.

LIPA'RIA SPHÆ'RICA.

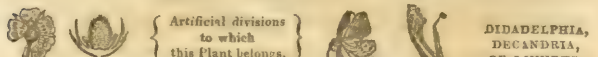
RUSCUS-LEAVED LIPARIA.

EXOGENÆ, OR DICOTYLEDONEÆ.



NATURAL ORDER, LEGUMINÓSÆ.

CALYCIFLORÆ, OF DECANDOLLE.



DIDADELPHIA, DECANDRIA, OF LINNEUS.

No. 97.

GENUS. Liparia. (*Linneus.* Mantissa, 156.) Calyx basi intrusâ, tubo brevi, limbo 5-lobo, lobis 4 superioribus lanceolatis acutis subæqualibus, inferiore longissimo elliptico petaloideo. Corolla glabra, vexillo ovali-oblongo, alis oblongis una per æstivationem alteram involvente, carinâ rectâ acutâ angustâ bicipiti. Stamina diadelpha. Ovarium sessile brevissimum. Stylus filiformis. Legumen ovatum oligospermum. *Decandolle*: Prodromus Systematis universalis regni vegetabilis, II, p. 121.

SPECIES. Liparia sphærica. *Linneus.* Fruticosa foliis lanceolatis nervosis glabris, floribus capitatis.

Character of the Genus Liparia. Calyx with the base pressed inwards, tube short, limb 5-lobed, the four upper lobes lanceolate acute, nearly equal, the inferior very long, elliptical petaloid. Corolla smooth, standard oval-oblong, wings oblong, the one during æstivation wrapping the other, keel straight acute narrow two-headed. Stamens diadelphous. Ovary sessile, very short. Style filiform. Pod ovate, few-seeded.

Description of the Species, Liparia Sphærica. A shrub with the stem about four feet high, smooth. Leaves alternate, sessile, distant, lanceolate, mucronate, entire, stiff, nerved. Flowers in a terminal capitule, which is smooth, sessile, surrounded by leaves or bracts of considerable length, which form a sort of involucre. Flowers of a yellowish or russet hue. Calyx having the lower sepal very long and petaloid, emarginately three-cleft. Corolla papilionaceous, fawn-coloured, the wings and keel twisted together, so as to require careful separation to shew their real character. Wings two-lobed at the lower margin. Keel straight, acute, narrow, two-headed. Stamens diadelphous.

Popular and Geographical Notice. This remarkably interesting plant is a native of the Cape of Good Hope: we are ignorant in what locality it grows, but most probably on the Zwellerdam moun-

tains, where it assists to compensate for the absence of the genus Erica, which ceases to form a part of the Flora of the Cape at this point. The species of Erica are replaced on these mountains by Blærias and the genera Struthiola, Passerina, Phylica, Podaliria, (P. buxifolia, myrtillifolia, vulgata) Polygala (P. oppositifolia,) Aspalathus, Liparia, Rafnia and Cleome.

The shining character of the leaves bears a striking resemblance to that of the Leucadendron argenteum R. Br. (the Protea argentea, Linn.) and both approximate to the appearance of the leaves of Astelma eximimum R. Br. (the Gnaphalium eximimum Willd.); this silvery hue must pleasingly diversify the scenery, while the clothing of the leaves with so thick a coating of silky hairs must materially protect them against the effects of the intense heat to which they are exposed. That a compact coating of hairs hinders excessive exhalation, and thereby preserves the plants from destruction in periods of universal heat and drought is manifest from the fact that plants so provided survive when others perish. Kalm mentions "that when the excessive drought of the spring of 1749 had completely parched up the hills and high grounds in Albany (U. S.) the Verbascum Thapsus (great mullein) alone was seen flourishing in the most arid situations, and when every other leaf was burnt up See Kalm's Travels, Vol. 2, p. 109.

Introduction; Where grown; Culture. The date of the introduction of this plant does not appear to be correctly ascertained, as some writers state it to have been introduced in 1783, others in 1794; it is still, however, a scarce plant, rarely ripening seeds, and being increased from cuttings with difficulty. Uninfluenced by the hand of the cultivator it will grow tall and slender, but by frequently stopping the leading shoots much more handsome and bushy plants may be obtained. If kept in a pot, in the greenhouse, its roots should have plenty of room, and free drainage; but it will grow most luxuriantly if planted in the conservatory, in a border formed of loam, peat, and sand.

Derivation of the Names.

Liparia from λιπαρος liparos, brilliant, in allusion to the shining of the leaves.
Sphærica from the globe-shaped form of the head of flowers.

Synonymes.

Liparia sphærica. Linneus Mantissa, 268. Sims: Bot. Mag. f. 1241. Loddiges: Bot. Cabinet, t. 642.
Borbonia sphærica. Lamarck Encyclop. Method.
Leucodendron splendens, Burmann: Flora Capensis.

Mus. J. Matthd. del.

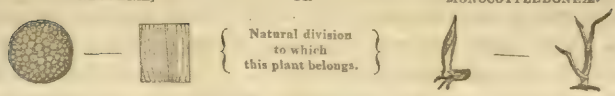
Calochortus albus

Nevitt sc.

CALOCHORTUS ALBUS.

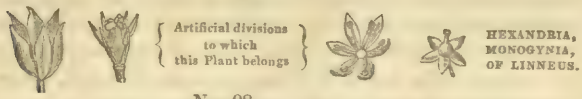
WHITE CALOCHORTUS.

ENDOGENÆ, OR MONOCOTYLEDONEÆ.



NATURAL ORDER, TULIPACEÆ.

HYPOGYNOSÆ. OF LINDLEY.



HEXANDRIA, MONOGYNIA, OF LINNEUS.

No. 98.

GENUS. CALOCHORTUS. *Pursh.* PERIGONIUM corollinum, deciduum, hexaphyllum; foliola sessilia vel subunguiculata, interiora supra basim fovea nectarifera et intus barbata, exteriora minora, foveolata vel subplana, nuda vel intus barbata. STAMINA sex, perigonii foliis basi adhærentia. OVARIUM triloculare. OVULA in loculis plurima, biseriata, horizontalia, anatropa. STIGMATA tria, subsessilia, libera vel basi coalita, reflexa, canaliculata. CAPSULA oblonga vel subglobosa, trigona, trilocularis, septicido-trivalvis, valvis demum bifidis. SEMINA in loculis plurima, uni-vel bi-seriata horizontalia, compressiuscula, testa fusca membranacea laxiuscula hinc raphe percursa. EMBRYO rectus, teres. HERBÆ Americæ borealis occidentalis, bulbosæ. FOLIA ensiformia, vaginantia. FLORES speciosi, umbellati, racemosi vel subsolitarii, purpurei vel albidi. *ENDLICHER:* Genera Plantarum, p. 140.

SPECIES. CALOCHORTUS ALBUS. *Douglas.* FLORIBUS pendulis ovoideo-inflatis, perigonii foliolis exterioribus subcalycinis ovali-oblongis imberbibus, foveolatis, interioribus duplo longioribus petaloideis margine nudiusculis intus barbatis, fovea leviter impressa.

CHARACTER OF THE GENUS, CALOCHORTUS. PERIGONE of the nature of a corolla, deciduous, six-leaved, leaves sessile or shortly stalked, the inner ones marked above the base on the inside with a nectariferous pit, and bearded on the inside; the outer ones smaller, with the pit, or without, bearded inside or not. STAMENS six, adhering to the base of the leaves of the perigon. OVARY three-celled. OVULES in each cell several, in two rows, horizontal, anatropous. STIGMAS three, nearly sessile, free or joined at the base, reflexed, canaliculate. CAPSULE oblong, three-angled, three-celled, splitting into three valves along the dissepiments, the valves at length bifid. SEEDS several in each cell, usually in one or two rows, horizontal, somewhat compressed, testa brown, membranous, rather loose, with the raphis running along it on one side. EMBRYO straight, cylindrical.

DESCRIPTION OF THE SPECIES, CALOCHORTUS ALBUS. BULB small, tunicated. STEM erect, flexuose, slightly branched, perfectly smooth as well as the rest of the plant, about a foot to a foot and a half high. LEAVES sheathing at the base, sword-shaped, rather broad and longer than the peduncles. PEDUNCLES axillary, one-flowered,

erect, an inch and a half to two inches long, without bracts. Flowers disposed, two to four together in the upper part of the stem or branches in loose racemes, almost shortened into umbels, each flower pendulous from the top of the peduncle, of an ovate-globose form, about an inch and a quarter long. Outer leaflets of the perigon ovate-oblong, greenish in the middle, membranous on the edges, ending in a short point, somewhat concave, but without any beard or nectariferous pit. Inner leaflets double the length of the outer ones, petaloid, white, concave, connivent and blunt at the top, contracted into a short stalk at the base, marked on the inside with a slightly impressed nectariferous pit covered with inflected hairs, glabrous below it, above it slightly covered with scattered hairs and almost naked at the border, where the few hairs that straggle so far are turned inwards and do not form a fringe. Capsule above an inch long, narrowed at both ends, sharply three-angled, each valve being keeled and somewhat winged on the back, entire and terminated in a long point. Seeds numerous, in two rows, tuberculated.

Popular and Geographical Notice. The Calochorti, natives of the North American continent to the west of the longitudinal ridge, whence many species have been introduced in great abundance by the Horticultural Society, are almost all of them highly ornamental and very desirable acquisitions to our gardens. We had originally referred the present species to Cyclobothra, but are now persuaded that Schultes and Endlicher are right in uniting the two genera as mere sections of one; and this Calochortus albus, with the Calochortus pulchellus of Douglas, and Calochortus elegans of Pursh would form an intermediate section, differing from the true Calochortus by the pendulous flowers and connivent petals; from Cyclobothra by the outer leaflets of the perigone being without pits or beards. On this account the section may be called Tribothra. G. B.

Introduction; Where grown; Culture. The Calochortus albus was transmitted to the Horticultural Society by Mr. Douglas, their collector, in the year 1833, and has since been extensively distributed by that Society. Like other Calochorti it is liable to decay in summer, probably owing to the same cause which makes Cape bulbs generally so difficult to preserve—the want of those months of dry scorching heat, during which the bulb is matured and hardened, and preserved from all tendency to ferment and rot during its season of rest. Flowers in June. It is usually potted in sandy peat.

Derivation of the Names.

Calochortus from καλος handsome, and χορτος grass. Albus, white.

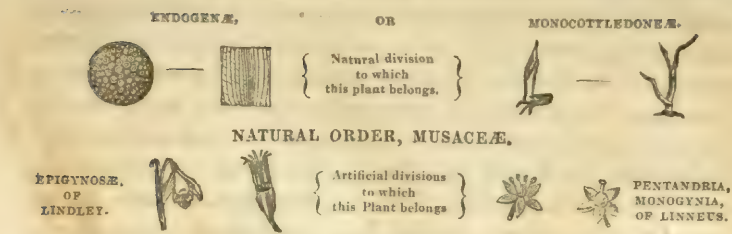
Synonymes.

Cyclobothra alba. Bentham: Transactions of the Horticultural Society, 2nd series, v. 1, p. 413, t. 14, fig. 3. Botanical Register, t. 1660.

Heliconia bicolor.

HELICO'NIA BI'COLOR.

TWO-COLOURED HELICONIA.



No. 101.

GENUS. HELICONIA. *LINNÆUS.* PERIGONII epigyni foliola exteriora æqualia, basi inter se concrescentia, interiora lateralia subconformia, approximata, genitalia amplectentia, posticum nanum. STAMINA quinque, sexto postico abortiente, basi perigonii adnata. OVARIUM inferum triloculare. OVULA in loculis soletaria, e basi axeos adsendentia, anatropa. STYLUS filiformis; stigma depressiusculum, obsolete sex-lobum. CAPSULA subdrupacea, tricocca, coccis osseis indehiscentibus. SEMINA in coccis solitaria, obovato-subglobosa, basifixa, testa ab endocarpis vix solubili. EMBRYO orthotropus, linearis, in axi albuminis farinaceo-carnosi, extremitate radiculari umbilicum attingente, infera. HERBÆ foliis longe petiolatis, petiolis basi vaginantibus, scapum radicalem sæpe velantibus, spathis pluribus distichis, in axilla floriferis. *ENDLICHER:* Genera Plantarum, p. 228.

SPECIES. HELICONIA BICOLOR, foliis basi angustatis acuminatis nervosis, caulino supremo basi spathæformi colorato, spathis lanceolatis coccineis ! 6 flores, perigonii e spatha exserti albi foliolis superioribus fere ad apicem concretis, filamento sterili lanceolato integro.

CHARACTER OF THE GENUS, HELICONIA. PERIGON epigynous, the exterior leaflets equal, growing together at the base, the two lateral inner ones nearly similar to them, placed near together, embracing the genital organs, the upper one very small. STAMENS five, the sixth upper one being entirely wanting, adnate to the base of the perigon. OVARY adherent, three-celled. OVULES solitary in each cell, ascending from the base of the axis, anatropous. STYLE filiform; stigma slightly depressed, obscurely six-cleft. CAPSULE somewhat drupaceous, formed of three bony indehiscent nuts. SEEDS solitary in each nut, obovate, or globose, attached by the base; the testa scarcely separable from the endocarp. EMBRYO orthotropous, linear, placed in the axis of a farinaceous fleshy albumen.

DESCRIPTION OF THE SPECIES, HELICONIA BICOLOR. ROOT tuberous. LEAVES numerous; foot-stalks stiff, erect, solid, three feet high, with scattered blotches of a fine brownish down, sheathing the stem at the base; lamina eighteen to twenty inches long, contracted at the base, and terminated in a long point, marked with longitudinal

impressed veins, perfectly smooth, excepting a longitudinal row of hairs on each side of the midrib on the under side. FLOWERING STEM rising to the height of the leaves, terminated in a distichous spike of flowers, the lowest spathe or upper stem-leaf without any flowers, coloured at the base like the spathe, terminated in a green leaf like the lower ones, but smaller; the other spathe lanceolate, acute, clasping the stem at the base, hollow, but less so than in most species, rather longer than the flowers, and like the flower-stem the pedicels and ovaria of a brilliant scarlet. The two lower spathes contain six, the two next four pedicels, and as many membranous whitish bracts, tinged with pink. FLOWERS inodorous. DIVISIONS OF THE PERIGON of a pure white tinged with green at the top, and of a firm wax-like consistence, the five upper ones adhering firmly nearly to the top; the lower one spreading, all of them narrow, linear-lanceolate. STAMENS five, fertile; filaments flattened, linear, terminated by a linear, oblong anther; sixth rudimentary stamen lanceolate, not half as long as the petal.

POPULAR AND GEOGRAPHICAL NOTICE. This splendid genus, allied to the Bananas or Plantain trees, is confined to the tropical parts of America and the West Indies; and although the growth of the plants is slow, and they therefore occupy a valuable place in the stove for many years before they flower, yet they fully repay the cultivator's patience and care, by the great beauty and long duration of their spikes of flowers. The present species, a native of the Brazils, is peculiarly conspicuous by the contrast of the richly coloured flower-stem and spathe, with the white of the flower itself. It appears to come nearest to the Heliconia acuminata of Richard, but differs especially in the colour of the flowers. G. B.

INTRODUCTION; WHERE GROWN; CULTURE. This new Heliconia was sent, ten or twelve years since, by Baron de Schach, from the Brazils, to the Botanic Garden at Liverpool. It has there been grown in the stove, in a mixture of loam and peat with a little manure, and flowered in the months of February and March, when our drawing was made. It may be propagated by offsets or by division.

DERIVATION OF THE NAMES.

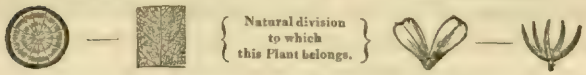
HELICONIA: it is said that Linneus derived this name from Mount Helicon, sacred to the Muses, to indicate the affinity between Heliconia and Musa, an etymology not strictly in accordance with the usual exactness of that great master, if it be true that Musa was dedicated to a Professor of that name and not to the Muses. BICOLOR, two-coloured, in allusion to the contrast between the colour of the spathæ and that of the flowers.

Anthocercis littorea

ANTHOCER'CIS LITTO'REA.

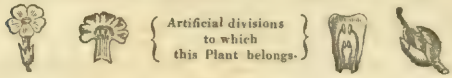
SEA-COAST ANTHOCERCIS.

EXOGENÆ, OR DICOTYLEDONEÆ.



NATURAL ORDER, SOLANACEÆ.

COROLLIFLORÆ, OF DECANDOLLE.



DIDYNAMIA, ANGIOSPERMIA, OF LINNEUS.

No. 102.

GENUS. ANTHOCERCIS. *LABILLARDIERE.* CALYX quinquefidus. COROLLA campanulata, tubo basi coarctatâ staminiferâ, limbo quinquepartito, æquali. STAMINA inclusa, didynama, cum rudimento quinti. STIGMA capitato-emarginatum. CAPSULA bilocularis, bivalvis, valvularum marginibus inflexis placentæ parallelæ insertis. SEMINA reticulata. FRUTICES glabriusculi. FOLIA alterna petiolato sive attenuatâ cum ramo articulata, crassa, nunc glanduloso-punctata. FLORES axillares, subsolitarii pedunculo minute bracteato, ad articulum sæpius solubili. COROLLA alba vel flava, speciosa, tubo intus striato, limbo quandoque sex-ad octo-partito. *ROBERT BROWN.* Prodromus Floræ Novæ Hollandiæ, p. 418.

SPECIES. ANTHOCERCIS LITTOREA. *LABILLARDIERE.* FOLIIS obovatis impunctatis margine lævibus utrinque ramulisque glaberrimis, corollæ laciniis tubo longioribus, capsulâ oblongâ calycem bis superante.

CHARACTER OF THE GENUS, ANTHOCERCIS. CALYX five cleft. COROLLA bell-shaped; the tube contracted and bearing the stamens at its base; the limb equally five-cleft. STAMENS included in the corolla, didynamous, with a rudiment of the fifth. STIGMAS capitate, emarginate. CAPSULE two-celled, two-valved, the margins of the valves bent inwards, attached to the parallel placenta. SEEDS reticulate.

DESCRIPTION OF THE SPECIES, ANTHOCERCIS LITTOREA. This is an erect SHRUB, which in its native country attains the height of six or eight feet. LEAVES obovate or oblong, obtuse, with sometimes a small point, perfectly entire, narrowed and sometimes shortly stalked at the base, thickish, one-nerved, not dotted, and perfectly smooth as well as the branches. FLOWER either solitary, or one or two together from the axillæ of the upper leaves, or more frequently several together in loose terminal racemes. PEDUNCLES furnished with a few small bracts, pedicels larger than the calyx, naked or furnished with two exceedingly minute bracts CALYX bell-shaped, the tube narrowed at the base, five-ribbed, smooth; division of the limb linear, rather longer

than the tube, but much shorter than the tubeof the corolla. Corolla bell-shaped, smooth, yellow, slightly ribbed outside, the inside of the tube marked with from thirteen to fifteen longitudinal purple stripes; divisions of the limb linear, somewhat broader at the base, spreading, longer than the tube. Stamens inserted in the base of the corolla, shorter than its tube, the filaments dilated at the base, the anthers nearly globular, the cells parallel, bursting by longitudinal slits; rudiment of the fifth stamen very minute.

Popular and Geographical Notice. This, the original species, was discovered by Labillardiere, on the South West Coast of Australia, where Mr. Brown found also a second species, and two others have since been detected by Mr. Cunningham in the interior, from Port Jackson. The genus, thus confined to Australia, belongs to the same group as the South American genus, Salpiglossis, and which is as it were intermediate between Scrophulariaceæ and Solanaceæ; but as the stamens are always didynamous, and the æstivation of the corolla in the young bud decidedly bilabiate, we have no hesitation in referring it to Scrophulariaceæ, notwithstanding the slight curvature of the embryo, which probably induced Mr. Brown to class it amongst Solanaceæ. G. B.

Introduction; Where grown; Culture. The Anthocercis littorea, was first introduced into this country in the year 1803, and has ever since remained in our greenhouses, where it grows freely, in a mixture of sand and peat, and may be readily increased by cuttings. Though inferior to Anthocercis viscosa in the size of its flowers it is nevertheless a desirable plant, and the more particularly so in as much as it continues in blossom during the whole of the summer and autumn. Our drawing was made in the rich collection of Mrs. Lawrence of Drayton Green.

Derivation of the Names.

Anthocercis, from ἀνθος a flower, and κερκις a ray, intended to signify the radiating flower; although, according to the rules usually followed in composing these names, the words should have been transposed, and the plant called Cercidanthus. Littorea signifies growing on the sea coast.

Synonymes.

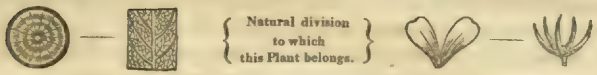
Anthocercis littorea. Labillardierre: Novæ Hollandiæ Plantarum Specimen, v. 2, p. 19, t. 158. Bot. Reg. t. 212.

BEGO'NIA INCARNA'TA.

Var. gracilis.

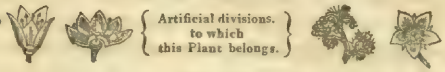
ROSE-COLOURED BEGONIA.

EXOGENÆ, OR DICOTYLEDONEÆ.



NATURAL ORDER, BEGONIACEÆ.

MONOCHLAMYDEÆ, OF DECANDOLLE.



MONŒCIA, POLYANDRIA, OF LINNEUS.

No. 103.

GENUS. BEGONIA. *LINNÆUS.* FLORES unisexuales monoici vel dioici. MASCULI: SEPALA duo distincta æstivatione conduplicativa. PETALA duo concava sepalis alterna et minora. STAMINA in centro floris sita, numero indefinita, basi plus minusve coalita. ANTHERÆ cum filamento continuæ, clavatæ, connectivo crasso, loculis rima longitudinali sæpe obliqua vel sinuosa dehiscentibus. PISTILLUM nullum. FŒMINEÆ: CALYCIS tubus ovario arcte adnatus, inæqualiter trilateralis, trialatus, limbus bipartitus laciniis subæqualibus, æstivatione conduplicativa. PETALA sæpius duo valde inæqualia, alterum (latere tubi calycini convexo opposita) bifidum vel bipartitum, alterum (latere plano oppositum) multo minus, interdum quatuor vel plura. STAMINA nulla. OVARIUM adnatum, trigonum, triloculare, placentis axilibus polyspermis. STYLUS brevis, crassus, trilobus, lobis sepalis et petalo majori oppositis. STIGMATA tria, crassa, sinuata vel biloba. CAPSULA membranacea, trigona, inæqualiter trialata, trilocularis, polysperma, basi rimis ad margines alarum dehiscens. SEMINA testa diaphana reticulata, embryone celluloso, albumine nullo, radicula ad hilum spectante. HERBÆ suffruticesæ tropicæ, succo acido. FOLIA alterna basi obliqua. STIPULÆ scariosæ. PEDUNCULI axillares vel pseudo-terminales dichotomi.

SPECIES. BEGONIA INCARNATA. *LINK ET OTTO.* Caule erecto ramoso glabro, foliis petiolatis dimidiato-cordatis acuminatis angulato-dentatis et ciliato-serratis glabris vel supra sparse strigosis, stipulis lanceolatis, pedunculis nutantibus multifloris subterminalibus demum lateralibus, capsulæ ala altera maxima triangulari.

CHARACTER OF THE GENUS, BEGONIA. FLOWERS unisexual monœcious or diœcious. MALES: Sepals two, distinct, folded against each other in the bud. PATALS two, concave, alternating with the sepals and smaller than them. STAMENS indefinite in number, placed in the centre of the flower and more or less joined together at the base. PISTIL none. FEMALES: CALYX with the tube completely adnate to the ovarium, unequally three-sided and three-winged, the limb divided into two nearly equal parts folded against each other in the bud. PETALS usually two, one bifid or bipartite, the other smaller and entire,

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REFERENCE TO THE DISSECTIONS.

1, Male flower, with the sepals and petals taken away, showing the stamens. 2, Anther, seen from the side. 3, The same seen from the edge. 5, Stigma magnified. 6, Female flower, with the petals and sepals taken away, showing the style and stigmas. 7, Section of the fruit.

sometimes four or more. STAMENS none. OVARY adnate, three-angled, three-celled, with polyspermous central placentæ. STYLE short and thick, three-lobed. STIGMAS three, waved or two-lobed. CAPSULE membranous three-sided, unequally three-winged, three-celled, many seeded, opening at the base in slits along the margin of the wings. SEEDS with a thin transparent reticulate testa, a very cellular embryo, no albumen, and a short radicle directed towards the hilum.

DESCRIPTION OF THE SPECIES, BEGONIA INCARNATA. STEM herbaceous, three to four feet high, smooth, swollen at the joints. LEAVES on rather long foot-stalks, very unequally cordate, acuminate, angularly toothed or almost lobed, and also furnished with a number of small ciliate serratures of a shining green, with a few scattered hairs above, smooth and often reddish underneath. STIPULES lanceolate, pellucid. PEDUNCLES two or three times dichotomous, at first apparently terminal, but becoming at length lateral, nodding. BRACTEAS ovate cordate, deciduous. FLOWERS monœcious, large, rose-coloured. MALES: SEPALS large, round-cordate. PETALS nearly as long, but narrow, spathulate. STAMENS connected together at the base. ANTHERS oblong-clavate, rather longer than the fore part of the filaments. FEMALES: LOBES of the calyx smaller than the sepals of the males, and not so broad. One PETAL (opposite the convex side of the ovary) as large as the divisions of the calyx, and, more or less deeply and unequally divided into two; the other petal nearly as long, but much narrower. CAPSULE three-winged, one very large, triangular, with a sharp or somewhat blunt external angle; the opposite one considerably smaller, and very blunt; the lateral one very narrow.

POPULAR AND GEOGRAPHICAL NOTICE. The genus Begonia, numerous in species, and widely diffused in the hotter regions of both hemispheres, with the exception, perhaps, of the continent of Africa, has, by the singularity of its structure, much puzzled the most distinguished botanists, both as to the nature of the floral parts, and as to the affinities of the genus forming by itself the order Begoniaceæ it was formerly considered as having but a simple floral envelope, and as being allied amongst Monochlamydeæ to Polygonaceæ. This opinion is now, however, generally abandoned. All appear to agree in classing it amongst vegetables of a higher order of structure, with a double floral envelope; some considering the divisions of the apparent perigon as a true corolla, the calyx being supposed to be abortive; and others following Lindley the perigon of the ordinary species as a calyx, and the additional divisions observable in some as the corolla. The affinities of the order have been severally sought in Hydrangeæ, Umbelliferæ, Campanulaceæ, Cucurbitaceæ, and Onagrarieæ.

With regard to the floral envelopes, starting from the principle that all such organs are intrinsically of the same nature, viz: transformed

leaves, and that the difference between calyx and corolla depends merely on their relative position, we may observe that in Begonia there are (at least in the species I have been enabled to examine) in both male and female flowers, two external divisions always enclosing the others in the bud, and which in the females are in direct relation with the two principal wings of the ovary; these alone ought perhaps to be considered as the calyx; whilst the others, whether two, three, or more, placed within the sepals in the bud, much later in their development, much more intimately connected with the stamens in the males, appear to me to have all the distinguishing marks of petals.

One objection to the theory of a disepalous calyx with an adherent tube, may however be derived from the nervation of this supposed adherent part, where we always observe three wings or prominent nerves, and three intermediate less marked nerves. Let us however suppose the tube of the calyx so completely adherent as to form but one substance with the ovarium, we ought thus in the young state, when the calyx is the strong organ, and the functions of the ovarium not yet called into action, to find the form approaching that which the calyx would give it, and as this organ withers away and the ovarium commences to develop itself, the outer form might be expected to suit itself more or less to the structure of the ovarium. Accordingly in the young bud, of many species at least, we find the tube very much compressed, the two edges corresponding to the midribs of the sepals prominently winged, one side perfectly flat with a vein along the centre where the sepals may be supposed to meet, the other side convex with one corresponding vein sometimes winged and sometimes not more prominent than the other; and if in this early stage intermediate veins may be traced on the convex side and not on the flat one, they are so faint as to show that they are of a secondary nature, or perhaps belonging to the ovarium and not to the calyx. As the fruit swells after fecundation, the convex side becomes more prominent, the intermediate veins more marked; and finally, though even the fruit is usually very irregular, in this respect, yet we may sometimes see a nearly equilateral triangular three-winged capsule. In one species I have occasionally found one cell of the ovary not developed, and a regular compressed two-winged capsule.

It is probable that no immediate affinities to Begoniaceæ can be traced amongst any plants hitherto known, and that some remote analogy is all that can be looked for with an order so strikingly characterised. Laying entirely aside the few orders still left amongst Monochlamydeæ, and neglecting also Monopetalæ, for it does not appear that anything but the dehiscence of the capsule, the least important of all carpological characters, led to the approximation with Campanulaceæ, it is amongst calyciflorous Polypetalæ that we must seek for the nearest allies. Of these Hydrangeæ and Umbelliferæ appear to me to

have no connection of any importance with Begoniaceæ; but Cucurbitaceæ and Onagraceæ, near which Lindley has lately placed them, have certainly many essential points in common with them. Cucurbitaceæ, in particular, have the same unisexual flowers, ternary inferior fruit, and want of albumen, with a certain degree of resemblance in the styles and anthers; but on the other hand their habit, their tendrils, definite stamens, the absolute as well as relative number of the floral parts, their parietal placentæ, and the structure of their seeds, are equally important characters in which they widely differ. The regular, isomerous, quaternary, floral and carpellary parts of Onagraceæ, are still more incompatible with Begoniaceæ. Perhaps some affinity might also be traced in Portulaceæ, many of which have, like Begoniaceæ, stipulate leaves, a dichotomous inflorescence, two sepals occasionally semi-adherent, with a ternary ovarium, axile placentæ, and petals and stamens bearing no regular relation either to the calyx or to the ovary; but here, again, the structure of the seeds, and the want of dissepiments in the ovarium, which is, moreover, usually free, are very important points of difference.

The species, of which a slight variety, very graceful in appearance, is here figured, is a native of the warmer parts of Mexico, a country which has furnished many beautiful Begonias. They are equally ornamental with the Brazilian ones, and have the advantage of requiring rather less heat.

Introduction; where grown; culture. The Begonia incarnata was first obtained from some earth in which other Mexican plants were sent to the Berlin Garden from M. Deppe. It was thence sent to Edinburgh, by some mistake, under the name of Begonia ciliata, and Dr. Graham ascertaining it was not that species, described it as a new one, giving it the name of Begonia insignis, by which it is generally known in this country. Like other Begonias it likes a light mixture of peat, loam, and sand. Without requiring, in ordinary circumstances, any high degree of temperature, it is easily forced, and made to produce its handsome drooping branches of flowers in great profusion at all times of the year. Our drawing was made from a plant in the Birmingham Horticultural Society's garden. We were favoured also with a drawing from a fine specimen in the nursery of Mr. Henderson, of Pine-apple Place, London.

Derivation of the Names.

Begonia, named by Tournefort in honour of Begon, said to be a French promoter of Botany. Incarnata, rose-coloured.

Synonymes.

Begonia incarnata. Link and Otto. Abbildungen, t. 19.

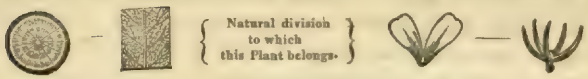
Begonia insignis. Graham: Botanical Magazine, t. 2900. Botanical Register, t.

Erica pseudovestita.

ERI'CA PSEU'DO-VESTI'TA.

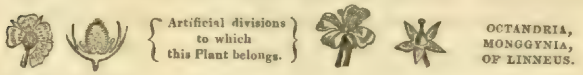
CLOTHED HYBRID HEATH.

EXOGENÆ, OR DICOTYLEDONEÆ.



NATURAL ORDER, ERICACEÆ.

CALYCIFLORÆ, OF DECANDOLLE.



OCTANDRIA, MONOGYNIA, OF LINNEUS.

No. 104.

GENUS. Erica. *Linnæus.* Calyx æqualis profunde quadrifidus vel sæpius quadripartitus. Corolla tubulosa, hyprocateriformis, urceolata, campanulata vel globosa, limbo brevi quadrifido, erecto recurvo revoluto vel stellato-patente. Stamina octo rarius sex vel septem, sub disco hypogyno sæpe glanduloso inserta. Filamenta libera vel rarissime submonadelpha. Antheræ terminales vel laterales, ad insertionem filamenti calcaribus duobus subulatis cristatisve auctæ vel muticæ. Ovarium quadriloculare loculis pluriovulatis. Stylus filiformis. Stigma capitatum vel rarius dilatatum peltatum integrum vel quadrifidum. Capsula quadrilocularis, loculicide quadrivalvis. Semina in loculis numerosa, placentisaxilibus. Frutices Europæ vel maxima parte Austro-Africanæ. Folia verticillata vel rarius sparsa, sæpius linearia rigida. Pedicelli uniflori axillares vel terminales tribracteati.

Character of the Genus, Erica. Calyx deeply four-cleft, or more frequently divided into four distinct sepals of equal size. Corolla tubular, salver-shaped, pitcher-shaped, bell-shaped, or globular, with a short four-cleft limb, which is erect, recurved, rolled back, or spreading. Stamens eight, or rarely six or seven, inserted under an hypogynous disk, which is frequently glandular. Filaments free, or slightly monadelphous. Anthers terminal or lateral, with or without two subulate or crest-shaped appendages at the insertion of the filaments. Ovary four-celled, each cell with many ovules. Style filiform. Stigma capitate, or sometimes broad and peltate, entire or four-lobed. Capsule four-celled, splitting through the middle of the cells into four valves. Seeds numerous in each cell, attached to central placentæ.

Description of the clothed hybrid Heath. An erect shrub, having much the appearance of the smaller varieties of Erica vestita. Branches smooth, densely covered with leaves. Leaves subulate, about half an inch long, smooth, six or more in a whorl. Flowers drooping, growing one, two, or three together, at the end of the axillary branches, shorter than the leaves, which gives the appearance of an irregular spike below the extremity of the branches. Bracts linear,

unequal in length, much shorter than the sepals, and at some distance from them. Sepals about three lines long, shortly ovate at the base, keeled, with a membranous margin, and terminating in a long subulate, green, and leaf-like point. Corolla seven or eight lines long, pink, with a whitish limb, tubular, straight or slightly curved, slightly swelling in the middle or above it, and scarcely contracted at the top, perfectly smooth, and obscurely ribbed; the limb short, somewhat spreading. Anthers at the throat of the corolla with subulate appendages. Style rather longer than the corolla, with a rather large capitate stigma. Ovary turbinate, ribbed, woolly.

Popular and Geographical Notice. This is one of those innumerable artificial hybrids, which are almost daily added to this splendid tribe by our indefatigable horticulturists; and which appear in our catalogues as natives of the Cape of Good Hope, where, indeed, their ancestors grew, but where it would be in vain to search for anything like these their degenerate, though beautiful, descendants. There seems no reason to suspect that a single Heath, naturally hybrid, has ever been found in a wild state; and as it appears absolutely necessary that the same artificial process which produces them, should be made use of to enable them to mature their seeds, their repugnancy to the regular laws of nature is as clearly demonstrated in the case of this genus as in that of any other. With regard to the origin of the individual here figured, it is evident that Erica vestita, with which it has so much affinity, must have been one of the parents. The other one may, perhaps, have been selected from amongst the tubular species with terminal flowers and awned anthers; or, more probably, from some one of the already numerous hybrids between Erica vestita and Erica ventricosa. G. B.

Introduction; Where grown; Culture. This beautiful variety of Heath was raised from seed by Mr. Thomas Williams, gardener to John Williams, Esq. of Oldford, Staffordshire; and is one amongst many hundred varieties raised by the same indefatigable cultivator. The generating, as it may be termed, numerous attractive plants, like that which we now figure, may be counted amongst the benefits accruing to society by the united zeal of a liberal proprietor and intelligent gardener. With the description of another beautiful variety of Heath, raised at Oldford, we intend giving some original observations on the culture of these plants.

Derivation of the Name.

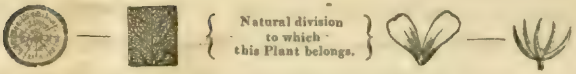
Erica, from a supposition that it was some species of this genus that Pliny meant by his Erica; or Dioscorides or Theophrastus by their ἔρεικη. Pseudo-vestita, false vestita, indicating the resemblance of the plant to Erica vestita, a name not conformable, it is true, to the rules of botanical nomenclature, but well suited to a garden hybrid, upon which a good botanical name, in so numerous a genus, would be thrown away.

Gloxinia speciosa

GLOXIN'IA SPECIO'SA.

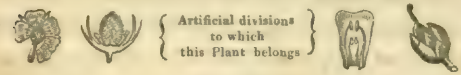
SHOWY GLOXINIA.

EXOGENÆ. OR DICOTYLEDONEÆ.



NATURAL ORDER, GESNERACEÆ.

CALYCIFLORÆ, OF DECANDOLLE.



DIDYNAMIA, ANGIOSPERMIA, OF LINNEUS.

No. 105.

GENUS. Gloxinia. *L'Heritier.* Calyx ovarii dimidio adnatus, limbo quinquepartito libero. Corolla semisuperior obliqua, infundibuliformis aut campanulata subringens, basi postice gibba, tubo ventricoso, limbi patuli labio superiore bilobo, inferiore trilobo. Stamina quatuor, didynama, antheris cohærentibus; rudimentum quinti posticum. Glandulæ quinque perigynæ. Capsula unilocularis, bivalvis, placentis duabus parietalibus bilobis, seminibus numerosis oblongis. Tuber crassum. Caulis simplex vel subnullus. Folia opposita crassa. Flores ampli, axillares.

SPECIES. Gloxinia speciosa. *Loddiges.* Foliis cano-hirsutis ovali-ellipticis oblongisve crenatis, pedunculis erectis flore longioribus, segmentis calycis angulatis acuminatis pubescentibus.

Character of the Genus, Gloxinia. Calyx adnate to the lower half of the ovary, the limb five-cleft, free. Corolla semi-superior, oblique, funnel shaped or bellshaped somewhat gaping at the mouth, the tube gibbous at the base on the upper side, swelled in the middle, the limbs preading two-lipped, the upper lip of two, the lower of three divisions. Stamens four, didynamous, the anthers cohering. Rudiment of a fifth stamen on the upper side. Glands five, perigynous. Capsule one-celled, two-valved, with two parietal two-cleft placentæ, and numerous oblong seeds.

Description of the Species, Gloxinia speciosa. Tuber thick. Stem thick, simple, sometimes very short and entirely concealed by the leaves, sometimes lengthened out to the dimensions of a foot, always more or less hairy. Leaves varying in size from four to six or eight inches in length, borne on short or long footstalks, more or less ovate and elliptical, sometimes very broad and rounded or even heart-shaped at the base, occasionally, especially the upper ones narrowed at the base, always crenate, soft, thick, convex or bullate, and covered with whitish hairs on both sides; upper floral leaves generally reduced to a very small size. Flowers large and numerous, forming a handsome bunch within the leaves, usually shorter than they are, sometimes

far out-topping them. Each flower is borne on a long axillary ebracteate peduncle. Calyx broadly campanulate, the tube short and adhering to the ovarium, the divisions more or less broadly lanceolate, terminating in a point, from half an inch to three quarters in length, green, hairy, and foliaceous. Corolla nodding, from one and a half to two and a half inches in length, violet coloured on the outside, the divisions of the limb broad rounded, the lower one rather longer and smaller and more deeply separated than the others, all of them pale on the inside, the throat purple and the tube streaked inside white and purple.

Popular and Geographical Notice. Two supposed species of Gloxinia, speciosa and caulescens, are well known to our hothouse amateurs by name, but, in any large collection, so gradual a connecting link between the one and the other may be observed, as to render it impossible to draw any line of distinction; and this is not entirely owing to hybridising, although that has been much practised, but owing to their being naturally but varieties of one species, as shown by native specimens, and consequently garden seedlings must be expected to sport even beyond the limits observed in their own country, the Brasilian empire. The present variety, intermediate between the two extremes in the length of the stem, exceeds most of them in the beauty of colour and size of the flower. G. B.

Introduction; Where grown; Culture. The species was first introduced about the year 1815, and being of easy cultivation is become common in our hothouses. The beautiful variety, the subject of the present plate, was raised by Mrs. Lawrence of Drayton Green, where our drawing was made. To this lady—a most liberal patron of floriculture, we are also indebted for numerous specimens of the most splendid newly-introduced exotics. This fine variety of Gloxinia speciosa requires to be kept in the stove; and should be permitted to have a season of rest, by keeping the soil nearly dry when its tuber becomes dormant. It may be raised by cuttings, either of the leaves or stems, and should be potted in a rich soil, mixed with coarse sand.

Derivation of the Name.

Gloxinia, named by L'Héritier in honour of Gloxin, a botanist of Colmar.
Speciosa, beautiful.

Synonymes.

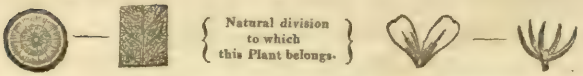
Gloxinia speciosa, Loddiges' Botanical Cabinet, t. 28. Botanical Reg. t. 213.
Gloxinia caulescens, Botanical Register, t. 1127.

Chorozema Dicksonii

CHOROZE'MA DICKSO'NII.

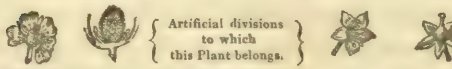
DICKSON'S CHOROZEMA.

EXOGENÆ, OR DICOTYLEDONEÆ.



NATURAL ORDER, LEGUMINOSÆ.

CALICIFLORÆ, OF DECANDOLLE.



DECANDRIA, MONOGYNIA, OF LINNEUS.

No. 106.

GENUS. CHOROZEMA. *LABILLARDIERE.* CALYX ad medium vel brevius bilabiatus, labio superiore lato breviter bifido, inferiore tripartito. COROLLÆ vexillum alis vix longius, rotundatum emarginatum vel bifidum. ALÆ oblongæ basi angustatæ. CARINA alis brevior, ventricosa, obtusa. STAMINA libera, filamentis glabris. OVARIUM sessile vel breviter stipitatum, dense pluriovulatum. STYLUS brevis, uncinato-recurvus, glaber. STIGMA obliquum vel subrectum, tenue vel capitatum. LEGUMEN ovatum, sessile vel subsessile, turgidum, intus nudum. HERBÆ suffrutices, fruticesve. FOLIA alterna vel sparsa, simplicia, coriacea, sæpius glabra. STIPULÆ parvæ, subulatæ. INFLORESCENTIA racemosa vel axillaris, axillis floridis in racemum terminalem foliosum approximatis. PEDICELLI bibracteolati. FLORES rubri vel aurantiaci. *BENTHAM:* Annalen des Wiener Museums, v. 2, p. 74.

SPECIES. CHOROZEMA DICKSONII, caule fruticoso, erecto; foliis sparsis, lanceolatis, subciliatis, mucronatis, sub-recurvis, utrinque sub-pilosis; racemis foliis oppositis, spicatis; calyce pilis nigris, et albidis longioribus, vestito.

CHARACTER OF THE GENUS, CHOROZEMA. CALYX split to the middle or not so deeply into two lips, of which the upper one is broad and shortly two-cleft; the lower one deeply three-cleft. STANDARD scarcely longer than the wings, round, emarginate or two-cleft. WINGS oblong, narrowed at the base. KEEL shorter than the wings, ventricose, blunt. STAMENS free, the filaments smooth. OVARY sessile or borne on a short stalk, with several ovules. STYLE short, hooked, smooth. STIGMA oblique or nearly straight, slender or capitate. POD ovate, sessile or nearly so, swollen, without any pithy substance inside.

DESCRIPTION OF THE SPECIES, CHOROZEMA DICKSONII. SHRUB erect, branched, slender, twigs ascending, green, hairy, and sprinkled with darker green spots. LEAVES lanceolate, spreading or reflected, ciliated, and having generally, on both surfaces, a few long spreading hairs, mucronate, without stipules, shortly petiolate. RACEMES opposite to the leaves, spicate; pedicels cernuous, solitary in the axils of subulate deciduous bracts. FLOWERS few on each raceme, collected near the apex, large and handsome, orange-red. Calyx bilabiate,

somewhat attenuated at the base, on the outside as well as the pedicels and rachis hairy, the hairs being partly long, white, and spreading, partly short, adpressed, and black, on the inside purple and less hairy; upper lip bifid, the lobes diverging and broad; lower lip tripartite, the segments lanceolate-subulate, reflected. PETALS inserted near the base of the calyx, vexillum large, semi-orbicular, reflected, notched, of nearly uniform red orange on both sides, and towards the keel with an oblong yellow spot which is rather longer than the upper lip of the calyx; wings spathulato-elliptical, redder and darker than the vexillum, connivent along the upper edge and at the apex, pitted on the outside, and having a corresponding blunt tooth within; keel subacute, covered by the wings, inflated, its petals agglutinated from the apex to the claws, which are linear and distant. STAMENS included in the keel, ten, free; anthers small, yellow, erect, bursting in front. PISTIL about the same length as the stamens; stigma slightly pointed; style flat, with a dense tuft of short white hairs immediately below the stigma on its outer side, and a small hook above; germen stipulate, closely covered with rather long adpressed hairs, colourless and silky on the sides, black at both sutures. OVULES numerous, (about ten.)

R. G.

POPULAR AND GEOGRAPHICAL NOTICE. Australia, that fertile, and most promising country, has exclusively furnished us with numerous genera of plants, particularly of the order Leguminosæ, amongst which our present subject ranks with conspicuous beauty. The first plant of this genus was discovered by Labillardiere, who was attached to the voyage of research, which had for its principal object the discovery of the lost La Perouse, and the genus thereby becomes immortalized by its connexion with these celebrated men.

INTRODUCTION; WHERE GROWN; CULTURE. This very handsome plant was raised by Messrs. James Dickson and Sons, of Edinburgh, from seeds received in 1836, from Mrs. Murray of Lintrose, Forfarshire, having been originally imported from Swan River. Its present height, (January, 1839) is three feet, but it appears not unlikely to grow to double this height. It flowers in the greenhouse from May to September. It may be propagated either from seeds or cuttings, and should be planted in sandy peat and loam.

DERIVATION OF THE NAMES.

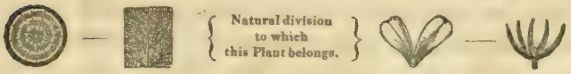
CHOROZEMA, from the Greek χορος CHOROS, a dance; ξημα ZEMA a drink, in allusion to the joy experienced by Labillardiere on finding fresh water and a species of Chorozema near it.

Jatropha panduraefolia

JA'TROPHA PANDURÆFO'LIA.

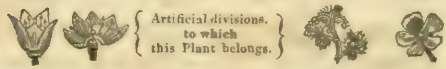
FIDDLE-LEAVED JATROPHA.

EXOGENÆ, OR DICOTYLEDONEÆ.



NATURAL ORDER, EUPHORBIACEÆ.

MONOCHLAMYDEÆ, OF DECANDOLLE.



MONŒCIA, MONADELPHIA, OF LINNEUS.

No. 107.

GENUS. Jatropha. *Linnæus.* Flores monoici. Calyx quinquepartitus aut quinquelobus; præfloratio convolutiva. Corolla quinquepartita aut nulla; præfloratio contorta. Glandulæ aut squamulæ quinque, rarius nullæ, nunc distinctæ, nunc in annulum sinuatum discumve coalitæ. Masculi: Stamina octo ad decem, filamentis infra connatis, quorum tria vel quinque interiora longiora. Feminei. Styli tres, bilobi bifidive, aut plures dichotomi. Stigmata sex aut plura. Ovarium triloculare, loculis uniovulates. Fructus capsularis tricoccus. Arbores aut frutices, rarius herbæ lactescentes. Folia alterna, integra vel lobata. Flores axillares seu terminales, corymbosi, plerumque non obscure colorati. Adrien de Jussieu de Euphorbiacearum generibus, p. 37.

SPECIES. Jatropha panduræfolia. *Sims.* Caule fruticoso, foliis obovato-oblongis, acuminatis basi irregulariter, dentatis lobatisve, corymbis terminalibus, calycibus breviter quinquelobis, corollis pentapetalis, staminibus decem, quinque interioribus longioribus.

Character of the Genus, Jatropha. Flowers monœcious. Calyx five-cleft, more or less deeply convolute in the bud. Corolla of five petals or none, twisted in the bud. Glands or little scales five, seldom none, either distinct or joined together in a little ring or disk. Male flowers: Stamens eight or ten, the filaments joined together at the base, three or five inner ones longer than the others. Female flowers: Styles three, two-lobed or two-cleft, or several times dichotomous. Stigmas six, or several. Ovary three-celled, with one ovule in each cell. Fruit capsular, of three cocci.

Description of the Species, Jatropha panduræfolia. Shrub of two or three feet in height, without any hairs, but the stem often marked with oblong tubercles. Leaves on short foot-stalks, three or four inches long, usually obovate-oblong, ending in a long point, broad and entire, or with here and there a very small tooth in the upper part, contracted below the middle, and near the base there are more or less of sharp teeth, and sometimes acuminated lobes, green on the upper side, tinged more or less with red underneath. Stipules very minute, setaceous, with a broad base. Corymbs terminal, on long

foot-stalks. Bracts lanceolate at the base of each ramification, the lower ones half an inch long, the upper ones much shorter. Calyx reddish, bell-shaped, with five teeth or short lobes. Petals five, three times as long as the calyx, slightly connected at the base, obovate or obcordate, of a rich red colour. Stamens in the males, ten, five outer ones just projecting above the tube of the corolla, five longer inner ones. Capsule of the females large and smooth.

Popular and Geographical Notice. This genus, chiefly inhabiting the tropical regions of both continents, is numerous in species, even after the deduction of the Manihots (Janipha), and the Siphonias, or American Caoutchouc trees. They are many of them very ornamental, and furnish some very powerful medicines, amongst others the celebrated Curcas of East India. The present species belongs to a West Indian group remarkable for their large red petals, all of which would be very desirable acquisitions. G. B.

Introduction; Where grown; Culture. The Jatropha Panduræfolia was first introduced by Mr. J. Fraser from the island of Cuba, in the beginning of the present century. It has ever since remained in our stoves, though not very frequently seen. The great impulse lately given to Horticulture has induced not only the introduction of novelties, but the searching out of many old but beautiful plants lying almost neglected in our stoves; amongst others the present one certainly rivals in appearance many of the handsome new Euphorbias. Our drawing was made in July, from a plant in the rich collection of Mrs. Lawrence of Drayton Green. When successfully cultivated, it is not only a handsome shrub, but a very free flowerer, and deserving a place in every well-stocked stove. It should be potted in a mixture of loam, peat, and sand; and, like other milky succulent plants, have an ample quantity of drainers beneath its roots, and be rather sparingly watered in winter. It may be propagated by cuttings, which should be made in spring just before it commences growing. When these are taken from the parent plant, they should be laid by in the stove, for twenty-four hours at least, previous to being planted. This will reduce their juices, and prevent premature decay. Afterwards plant them in sand, and give a strong bottom heat, which will soon excite them to active vegetation.

Derivation of the Names.

Jatropha, from *ἰατρος* a physician, and *τροφη* food, from its importance in medicine. Panduræformis, in botanical Latin, a shape compared to that of our fiddles, though nothing like that of the Roman pandura.

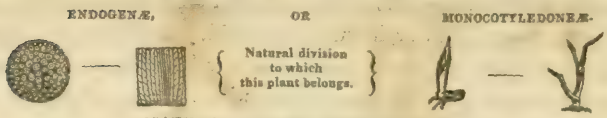
Synonymes.

Jatropha Panduræfolia. Sims: Botanical Magazine, t. 604.

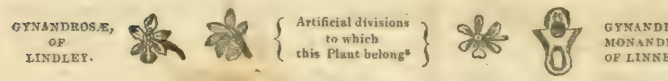
Gongora atropurpurea.

GONGO'RA ATROPURPU'REA.

DARK PURPLE GONGORA.



NATURAL ORDER, ORCHIDACEÆ.



No. 108.

GENUS. GONGORA. *RUIZ ET PAVON.* PERIGONII patentis foliola exteriora lateralia libera divaricata, supremum columnæ dorso adnatum; interiora minora, columnæ medio connata. LABELLUM cum basi columnæ continuum, liberum, unguiculatum, hypochilio explanato utrinque cornuto, epichilio verticali ancipiti (faciebus oppositis complicatis connatis) acuminato. COLUMNA elongata, arcuata, clavata, marginata. ANTHERA incomplete bilocularis. POLLINIA duo linearia in caudicula cuneata sessilia. HERBÆ Americanæ, epiphytæ, pseudo-bulbosæ. FOLIA plicata. RACEMI elongati, flexuosi, multiflori. *ENDLICHER:* Genera Plantarum, p. 199.

SPECIES: GONGORA ATROPURPUREA. *HOOKER.* FOLIIS multiplicatis, perigonii foliolis exterioribus e lata basi acuminatis, hypochilio sub-quadricornuto denticulis interjectis.

CHARACTER OF THE GENUS, GONGORA. PERIGON spreading, the outer lateral divisions free and divaricate, the upper one adnate to the back of the column, the inner one smaller, adnate to the middle of the column. LABELLUM continuous with the base of the column, free, unguiculate; the hypochilium spreading, cornute on both sides, the epichilium vertical, flattened, with the opposite faces folded together and connate, acuminate. COLUMN long, arched, club-shaped, with a margin. ANTHER incompletely bilocular. POLLEN-MASSES two, linear, sessile, on a wedge-shaped caudicula.

DESCRIPTION OF THE SPECIES, GONGORA ATROPURPUREA. PSEUDO-BULBS oblong-cylindrical, deeply sulcate, two-leaved. LEAVES ovate lanceolate, with many longitudinal folds, rather wavy, a foot long. RACEMES from the base of the pseudo-bulbs, about two or sometimes three feet long, hanging, lax, simple, of a deep brown or chocolate colour which pervades every part of the flower. UPPER SEPAL lanceolate, obtuse, adnate at the base to the back of the column, the margins revolute. LATERAL SEPALS broader, likewise revolute at the margins, spreading from the base of the column. PETALS much

smaller, broad, with a twisted apex, and adnate to the sides of the column just below its centre. LABELLUM continuous with the base of the column, the lower part or hypochilium somewhat spreading, with two erect appendages or horns on each side; those next the column linear and obtuse, the others terminated in a pointed apex; extremity of the labellum or epichilium folded, with the faces adnate so as to form a vertical triangular plate, sharp at its lower edge, furrowed on the upper edge, attached by one angle which is obtuse, the two other angles terminating in a fine point, COLUMN about an inch long, curved, somewhat club-shaped. ANTHERS terminal, yellow.

POPULAR AND GEOGRAPHICAL NOTICE. A small but very singular South American genus, one species being found in Peru and the present one in Trinidad, where, like other epiphytes, they hang from the stems of trees. G. B.

INTRODUCTION; WHERE GROWN; CULTURE. This species was transmitted to this country from the isle of Trinidad, by the late Baron de Schach, and first flowered in the Liverpool Botanic Garden, in the year 1825. It has since been much multiplied, and under the hands of such cultivators as the Messrs. Loddiges, in whose splendidly stocked Orchidaceous plant house our drawing was made, specimens may be seen with twenty or thirty magnificent spikes hanging from the same tuft, all round the pot in which it is grown. Dr. Lindley has observed in his Lady's Botany, "It is in tropical countries, in damp woods, or on the sides of hills in a serene and equal climate, that these glorious flowers are seen in all their beauty. Seated on the branches of living trees, or resting among the decayed bark of fallen trunks, or running over mossy rocks, or hanging above the head of the admiring traveller, suspended from the gigantic arm of some monarch of the forest, they develope flowers of the gayest colours, and the most varied forms, and they often fill the woods at night with their mild and delicate fragrance." Notwithstanding the beauty which they display in their own tropical woods, it is questionable whether native specimens were ever found equalling those to which we have alluded.

DERIVATION OF THE NAMES.

GONGORA, named by Ruiz and Pavon in honour of a Spaniard of that name. ATROPURPUREA, dark purple.

SYNONYMES.

GONGORA ATROPURPUREA. Hooker: Exotic Flora, t. 178. Lindley: Genera and Species, p. 159.

ENKIAN'THUS RETICULA'TUS.

NETTED ENKIANTHUS.

EXOGENÆ. OR DICOTYLEDONEÆ.

{ Natural division to which this Plant belongs }

NATURAL ORDER, ERICACEÆ.

CALYCIFLORÆ, OF DECANDOLLE.

{ Artificial divisions to which this Plant belongs }

DECANDRIA, MONOGYNIA, OF LINNÆUS.

No. 1.

GENUS. ENKIANTHUS. *LOUREIRO.* CALYX persistens, 5-fidus. COROLLA campanulata 5-fida facile 5-partibilis, basi foveis 5 nectariferis, calycis segmentis alternis. STAMINA basi corollæ inserta, pilosa. ANTHERÆ bicornes. OVARIUM 5 loculare, polyspermum. STIGMA simplex. CAPSULA stylo persistente coronata.

SPECIES. ENKIANTHUS RETICULATUS. *LINDLEY.* FOLIIS oblongis utrinque acutis reticulatis breviter petiolatis, calycis segmentis ovatis ovario multo brevioribus foveis obscuris vix diaphanis.

CHARACTER OF THE GENUS, ENKIANTHUS. CALYX 5-cleft persistent. COROLLA campanulate, 5-cleft, and easily separable into 5 petals (with a nectariferous pit at the base of each) alternate with the segments of the calyx. STAMENS hairy, inserted into the base of the corolla. ANTHERS two-horned. OVARY 5-celled many-seeded. STIGMA simple. CAPSULE crowned by the persistent style.

DESCRIPTION OF THE SPECIES, ENKIANTHUS RETICULATUS. Small SHRUB. Branches naked, erect, nearly simple, leafy towards the top. LEAVES oblong, narrowed at each end, reticulated, slightly petiolate. UMBELS of flowers terminal, placed among the new leaves, with numerous pale linear-lanceolate bracts. FLOWERS solitary, drooping from club-shaped pedicels. CALYX small, acute minutely ciliated, and many times shorter than the ovary. COROLLA nearly white, monopetalous campanulate, 5-toothed, teeth obtuse, at the base are 5 nectariferous pits, scarcely transparent, crimson, smooth within. STAMENS 10, half the length of the corolla, into the base of which they are inserted; filaments subulate hairy dilated and approximating at the base. ANTHERS two-horned, opening at the apex by a double pore. OVARY oblong, 5-celled, many seeded. STYLE persistent, filiform, as long as the corolla. Stigma simple. FRUIT a capsule, crowned with the style.

POPULAR AND GEOGRAPHICAL NOTICE. This and another species of this beautiful genus of shrubs, were long held in great veneration by the Chinese; the former was not introduced into Britain till 1812. It closely approaches Arbutus in character, but is distinguished by its capsular, not baccate, fruit.

REFERENCE TO THE DISSECTIONS.

1, Flower cut in half, showing the position of the stamens. 2, 3, Stamens magnified to show the two-horned anther.

Introduction; where grown; Culture. We are indebted to the kindness of John Willmore, Esq. of Oldford, Staffordshire, for the specimen drawn. Mr. T. Williams, his zealous and talented gardener, informs us that to encourage this plant to flower it should be actively stimulated when it begins to shoot, by being removed from the Greenhouse into the Stove. Mr. R. A. Salisbury, who wrote an interesting notice of it, was of opinion that it might bear full exposure in the southern parts of the island, if planted against a wall, and protected during frost. He was led to this view by observing the structure of the buds, which are large, scaly, and viscid, like those of the Rhododendra. This is an important guide in acclimatising plants, since those shrubs and trees, the buds of which are either naturally provided with scales, or have the power of forming them when placed in a colder situation than their natural locality, and, above all, if created with a viscid resinous juice like those of the horse-chesnut, and many poplars, will bear without injury a very low temperature.

The nectariferous glands of this plant produce much honey, and Mr. Salisbury observed, that bees were very instrumental in assisting the functions of fertilization of the seeds, as the anthers do not discharge their pollen spontaneously like those of many plants, but by sudden jerks, when their spurs are bent down by insects attempting to get at the honey below. He therefore suggested that, when kept where the bees have no access, the stigma should be artificially fecundated by sprinkling the pollen over it.

In its natural situation it is chiefly indebted to the agency of insects for the continuation of the species. Man in his pride is apt to think

"That many a flower is born to blush unseen,"

if it bloom remote from the place of his abode; but a more extended knowledge of Nature reveals to us that every flower has its attendant insect or bird, to minister to its necessities, or benefit by its processes. The naturalist, therefore, instead of indulging an unbecoming vanity, has his mind prepared to see

God every where, sustaining and directing;
So that the earth shall yield her secrets up,
And every object shall be charged to strike,
To teach, to gratify, and to suggest.

Derivation of the Names.

Enkianthus, from εγχυος turgid, alluding to the swollen appearance of the flowers.
Reticulatus, from the reticulated or netted veins of the leaves.

synonymes.

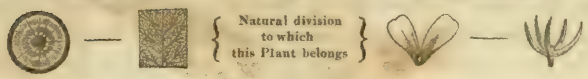
Enkianthus reticulatus, Lindley's Botanical Register, 885.
Enkianthus quinqueflorus; Andrews's Botanist's Repository, 102.
Enkianthus quinqueflora; Sims, in Botanical Magazine, 1649; Loddiges' Botanical Cabinet, 1101; Sprengel Systema Vegetabilium, Vol. II, p. 28.
Melidora pellucida; Salisbury in Horticultural Transactions, Vol. II, p. 156.

Mimulus cardinalis

MIM'ULUS CARDINA'LIS.

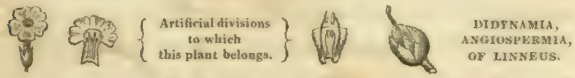
CARDINAL MONKEY FLOWER.

EXOGENÆ. OR DICOTYLEDONEÆ.



NATURAL ORDER, SCROPHULARIACEÆ.

COROLLIFLORÆ, OF DECANDOLLE.



DIDYNAMIA, ANGIOSPERMIA, OF LINNEUS.

No. 2.

GENUS. MIMULUS. *LINNEUS.* CALYX prismaticus. COROLLA subcampanulata, limbo bi-tri-lobato, lobis subæqualibus. STIGMA bilamellatum. Dissepimenta lateribus placentifera. *SPRENGEL.*

SPECIES. MIMULUS CARDINALIS. *DOUGLAS.* CAULE erecto, laxé ramoso, piloso. FOLIIS obovatis dentatis, basi connatis. FLORIBUS axillaribus, pedunculis brevioribus, calyce costato quinque dentato. COROLLA coccinea, bilabiata, labii superioris laciniis reflexis.

CHARACTER OF THE GENUS, MIMULUS. CALYX prismatical. COROLLA somewhat campanulate, two or three lobed, lobes nearly equal. STIGMA of two plates or lamellæ. Dissepiments placentiferous at the margins.

DESCRIPTION OF THE SPECIES, MIMULUS CARDINALIS. STEM from two and a half to three feet high, erect, loosely branched, and covered with long delicate hairs. LEAVES of a pale yellowish green, hairy ovate regularly toothed, soft and hairy. COROLLA internally of a bright scarlet, but of a pale reddish yellow on the outside; its border is divided into four rather convex lobes, all of which are oblong and notched at the end, and the lowermost is the widest. Along the base of each segment passes a short deep reddish brown line which loses itself in the tube.

POPULAR AND GEOGRAPHICAL NOTICE. Of all the species of Mimulus introduced of late years, this has, unquestionably, excited the greatest interest amongst floriculturists. Its flowers possess much beauty, and their colour is by no means a common one in the garden. They exhibit the same irritability in the stigma, which the other species of Mimulus are known to possess. The two plates of the stigma, at an early period in the stage of flowering, are separate and apart, but so soon as the pollen falls upon the inner surface they collapse, and it has been thought never again open. This latter circumstance is, however, dependent on contingencies, for if its collapse take place at an early period

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REFERENCE TO THE DISSECTIONS.

The calyx opened (after the corolla has been withdrawn) showing the germen and style. 2, Corolla opened, to shew the stamens attached thereto. 3, the anther unopened. 4, an anther after the discharge of its pollen. 5, one of the glandular spines, magnified, that grow on the anthers.

of its development, it certainly will reopen, unless such a portion of pollen remain attached to it as to continue the irritating influence. It is not any peculiar quality of the pollen that excites the stigma to action, for the like effect is produced by the contact of any other substance. If it be touched with the finger only, it immediately closes, but as such touch would not leave any matter resting on the stigma, it would soon recover from this effect. Although there exists a great difference between the interior and exterior surfaces of the plates of the stigma, their capability of excitement seems to be nearly equal. The outer surface is entirely smooth, whilst the inner one is wholly clothed with transparent glandular little spines, in the manner of the palate of some animals, which may bid defiance to the escape of a captured insect in the one, as would be the case with a grain of pollen in the other.

Introduction; where grown; Culture. The Mimulus cardinalis was introduced from California, by the late Mr. Douglas, into the garden of the Horticultural Society at Chiswick. It may be propagated by seeds or roots, and very readily from cuttings. Cultivated, during summer, in the open ground, it will flower from June to September; and if planted in moist rich soil, it will not suffer from a powerful sun. It has frequently been nursed in the greenhouse, under which treatment it loses much of its beauty, not only by growing to a loose and straggling plant, but also by the inferiority of the colour of its flowers. Still we are not confident that it will bear full exposure during winter. We were kindly favoured, amongst other beauties, with a small plant of the Mimulus cardinalis, by Mr. Widnall, nurseryman of Granchester, in April last, the splendour of which, ultimately, far exceeded that of any plant of the same species we have seen. We repotted it, several times, into pots gradually increasing in size, using a rich compost, principally of leaf mould. It had the night protection of an almost exhausted hotbed, till the middle of May, after which time it was fully exposed, and the pot in which it grew was kept continually standing in water, about an inch in depth. Here it developed its character in perfection, and although it may be reproached with reflexing its petals unduly, still they emit a splendour that would at once overpower the taunts of the most illnatured antiflorist of the dark ages.

Derivation of Names.

Mimulus, from *μιμω*, a monkey, the seeds resembling the face of this animal: Cardinalis, to signify its scarlet colour, like a cardinal's robe.

Synonymes.

Mimulus cardinalis. Lindley, in new series of Transactions of Horticultural Society, Vol. II, p. 70. The genus was established by Linneus; see Sprengel Linnæi Systema Vegetabilium, Vol. II, p. 681, Genus 2168.

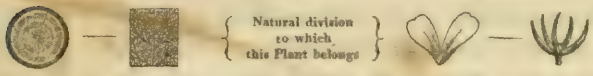
Aristolochia trifida

Mills del Watts sc

ARISTOLO'CHIA TRIFIDA.

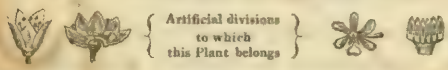
TRIFID BIRTHWORT.

EXOGENÆ. OR DYCOTYLEDONEÆ.



NATURAL ORDER, ARISTOLOCHIACEÆ.

MONOCHLAMYDEÆ, OF DECANDOLLE.



GYNANDRIA, HEXANDRIA, OF LINNEUS.

No. 3.

GENUS. ARISTOLOCHIA. *LINNEUS.* CALYX coloratus, tubulosus, basi ventricosus et sæpius appendice parvo instructus, apice dilatatus, in ligulam extensus. ANTHERÆ sex, subsessiles sub stigmate. OVARIUM inferum. STYLUS vix ullus. STIGMA sex-partitum. CAPSULA sex locularis.

SPECIES. ARISTOLOCHIA TRIFIDA. *LAMARCK.* CAULE volubili, sulcato foliisque glabris, trilobis; Calyce glabro, cylindraceo, incurvato. Labio cordato longissime cuspidato; appendice sexpartita, reflexa.

CHARACTER of the GENUS, ARISTOLOCHIA. CALYX coloured, tubular, swelling at the base, and often furnished with a small appendix, dilated at the apex, and prolonged into a strap-like tongue. ANTHERS six, subsessile, placed under the stigma. STYLE nearly deficient. STIGMA six-parted. CAPSULE six-celled.

DESCRIPTION OF THE SPECIES, ARISTOLOCHIA TRIFIDA. ROOT about the thickness of the thumb, and two feet long, dividing into three or four parts, twisted. STEMS several, slender, flexible, and smooth, either trailing along the ground, or climbing up trees. LOWER LEAVES about the size of the hand spread out; upper leaves smaller, alternate, petiolate, furnished with rather large stipules, which are amplexicaul, and sometimes even perfoliate, three-lobed. FLOWERS axillary, solitary, pedunculate, large, distended, doubled over, about an inch wide at the orifice, terminating in an appendix, which is prolonged to a great length, resembling a tendril, and tapering to a slender point. Externally the flowers are greenish yellow, with indistinct veins of a dull red, nearly white within, but furnished with a number of short hairs of a red colour. The inner surface of the appendix, of a brownish red, marked with a number of veins. Flowers and all parts of the plant diffuse a strong odour.

POPULAR AND GEOGRAPHICAL NOTICE. This genus of plants is one amongst the most singular productions of the vegetable world, one which cannot fail to excite the attention of the most incurious observer. The first inquiry would naturally be, wherefore this elongated thread-

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REFERENCE TO THE DISSECTION.

The outline sketch shews the germen of the Aristolochia trifida, by a portion of the calyx being cut away.

like apex of the lip. It is delightful to the naturalist to catch a glimpse of secondary causes; but here he must meet disappointment. Man is sometimes permitted to discover the applicability of floral appendages to the requirements of the plant; and but slight attention to the wisdom displayed in these functions of vegetables will forbid the naturalist doubting for a moment, the wisdom that gave to the Aristolochia trifida a lip of such length, and so fragile.

Some doubts having existed respecting the identity of this species of Aristolochia, we examined the specimen contained in the Banksian Herbarium, and found it correspond precisely with that from which our drawing was taken. It grows in the Caraccas, and near Portobello, ascending from the plains, to 2,700 feet. Whether our present species of Aristolochia possess virtues in common with some others of the same genus, we have no means of ascertaining. Dioscorides, the Greek botanist, treated of one of its species; Pliny followed him, and commented on the same, and several others, indigenous to the south of Europe, which were well known to his countrymen. Subsequently, Galen and our own Gerard described several species, and dwelt much on their virtues; and the Pharmacopœias of the present day have their preparations of Aristolochia; in these, however, an American species has superceded those of the ancients. In the several writers mentioned we possess a train of comment on the present genus, from a period antecedent to the Christian era, down to our own times.

Introduction; where grown; Culture. The Aristolochia trifida is of late introduction to this country. The original of our drawing grew luxuriantly in the hothouse at Weston, Salop, the seat of the Rt. Hon. the Earl of Bradford. It is a free climber, which flourishes when planted in a mixture of peat and loam.

Derivation of the Names.

The generic name, Aristolochia, is precisely that of Dioscorides, (*Αριστολοχια*) who described one of its species, the roots of which were used medicinally. Trifida, from the leaves being three lobed.

Synonymes.

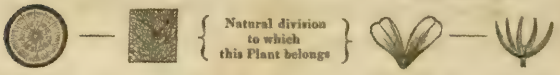
Aristolochia trifida. Lamarck, in the Encyclopedie Methodique Botanique, I. p. 251. Humboldt, Bonpland, et Kunth, Nova Genera et Species Plantarum, II, p. 117, Aristolochia, Genus, see Sprengel Systema Vegetabilium, III, p. 753.

Eucalyptus cuspidatus

ERIOSTE'MON CUSPIDA'TUS.

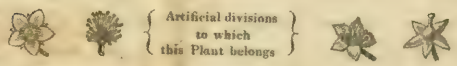
POINTED LEAVED ERIOSTEMON.

EXOGENÆ. OR DICOTYLEDONEÆ.



NATURAL ORDER, RUTACEÆ.

THALAMIFLORÆ OF DECANDOLLE.



DECANDRIA, MONOGYNIA, OF LINNEUS.

No. 4.

GENUS. ERIOSTEMON. *SMITH.* CALYX 5-partitus. PETALA 5. STAMINA 10, filamentis hispidis ciliatis aut nudis, antheris terminalibus. Stylus brevissimus. CARPELLA 5 basi coalita. SEMINA in loculis 2, aut abortu solitaria. EMBRYO subcurvatus, radiculâ longâ. *DECANDOLLE.*

SPECIES. ERIOSTEMON CUSPIDATUS. FOLIIS oblongo lanceolatis subacutis glaucescentibus apice uncinato mucronatis. RACEMIS umbellatis, 1-5. FLORIBUS axillaribus terminalibusve. *CUNNINGHAM.*

CHARACTER OF THE GENUS, ERIOSTEMON. CALYX 5-parted. PETALS 5. STAMENS 10, filaments hispid, fringed or naked, anthers terminal. STYLES very short. CARPELS 5, united at the base. SEEDS 1 or 2 in each cell. EMBRYO slightly curved. RADICLE long.

DESCRIPTION OF THE SPECIES, ERIOSTEMON CUSPIDATUS. STRONG SHRUB, from 2 to 4 feet high. STEM branched, somewhat rough. LEAVES oblong-lanceolate somewhat acute, rather glaucous, their apex with a hooked mucro. Membranous at the edges. When held to the light they appear filled with transparent dots, which are prominent glands, forming a roughness on the under surface of the leaves and stem, and even on the petals and anthers, especially towards their apex. FLOWER STEMS axillary or terminal, bearing true umbels of 4-5 pink flowers. CALYX small, of 5 lobes. Lobes of Anthers separate below and adnate above to a connective which slightly projects in a point at the apex. In the allied genus Diosma this projection becomes glandular. PETALS 5 ovate lanceolate. STAMENS 10, in two rows, the outer alternating with the inner row, opposite the petals, shorter. POLLEN orange colour, filament dilated fringed. STYLE 1, very short. OVARY, 5-celled, seeds few. This genus has close affinities with the genera Diosma, Crowea, and Phlebalium.

POPULAR AND GEOGRAPHICAL NOTICE. All the species of this genus, hitherto discovered, are natives of Australia, which vast island has a vegetation almost peculiar to itself. The foliage of many of its trees

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REFERENCE TO THE DISSECTIONS.

1, Petal with two stamens, shewing their difference of length, that stamen which in the natural state of the flower is opposite the petal, being the shortest. 2, whole flower seen in front. 3, stamens surrounding the ovary, showing their hypogynous situation. 4, Ovary with disk or gynobase. 5, a single stamen.

is generally of a bluish grey or green hue, and nearly of the same colour on both sides of the leaf, a circumstance which gives a very monotonous character to the landscape scenery of that part of the world. The strong odour of these plants arises from a volatile oil copiously dispersed through the leaves and bark, and even the petals and stamens, under the form of minute glandular spots, appearing transparent by transmitted light, as in the Myrtle tribe.

Introduction; where grown; Culture. Seeds of this scarce plant were first imported into this country by the Messrs. Loddiges, and young plants were raised by them in 1823. The specimen from which our drawing was taken flowered in their rich collection, at Hackney, in March, 1836. This species of Eriostemon succeeds best in an airy greenhouse, free from the shade of larger shrubs. It may be increased from cuttings of the young wood, as these will readily strike root in sand, or sandy peat, under a bell-glass. Fresh sandy loam, mixed with peat, form a soil in which it may be successfully grown.

Derivation of the Names.

Eriostemon from *εριον* wool, and *στήμων* a stamen, from the woolly fringe of the filaments, a character, however, which does not occur in all the species. Cuspidatus, from cuspis, the point of a weapon, a term used in allusion to the acutely-pointed foliage of this species. The word Eriostemon has been considered, respectively, masculine, feminine, and neuter, by different writers.

Synonymes.

Eriostemon cuspidatus. Cunningham on Field's N. S. Wales, p. 331. Loddiges' Botanical Cabinet, 1249. Don's Dictionary of Gardening and Botany, Vol. I, p. 792. Decandolle Prodromus Regni Vegetabilis, L. p. 720.

Epacris nivalis

Mrs Withers del

EPAC'RIS NIVA'LIS.

SNOWY EPACRIS.

EXOGENÆ, OR DICOTYLEDONEÆ.

{ Natural division to which this Plant belongs. }

NATURAL ORDER, EPACRIDACEÆ.

CALYCIFLORÆ, OF DECANDOLLE.

{ Artificial division to which this Plant belongs. }

PENTANDRIA, MONOGYNIA, OF LINNÆUS.

No. 57.

GENUS. EPACRIS. *SMITH.* CALYX coloratus, multibracteatus, bracteis textura calycis. COROLLA tubulosa, limbo imberbi. STAMINA epipetala; antheris supra medium peltatis. SQUAMULÆ 5 hypogynæ. CAPSULA placentis columnæ centrali adnatis. *BROWN.* Prodromus Floræ Novæ Hollandiæ. p. 550.

SPECIES. EPACRIS NIVALIS. *LODDIGES.* Floribus pendulis racemosis, foliis lanceolatis sessilibus attenuato-acuminatis subtus striatis, pedunculis calyce bis brevioribus, corollis campanulatis basi constrictis: tubo calycem bis superante. *LINDLEY*, in Botanical Register, folio 1531.

CHARACTER OF THE GENUS, EPACRIS. CALYX coloured, furnished with many bracts, the bracts of the same texture as the calyx. COROLLA tubulose, limb without a beard. STAMENS epipetalous; anthers, peltate above the middle. SCALES 5, hypogynous. The capsules having the placentæ adnate to the central column.

DESCRIPTION OF THE SPECIES, EPACRIS NIVALIS. An evergreen shrub, from two to three feet high, branched; branches of a brownish purple colour, with an arachnoid pubescence, most of the branches laden with snow-white pendulous flowers. LEAVES alternate, sessile, ovato-lanceolate, reflexed, spreading, very much acuminate, smooth, green, striated on the under surface. FLOWERS axillary, solitary, pedicellate, secund, and drooping. CALYX 5-toothed, or of 5 nearly distinct sepals. SEPALS and BRACTS, ovate, acute, white, with a little down along the margins. COROLLA as long as the leaves, campanulate, limb of five spreading, or reflexed segments. STAMENS 5, attached by the filaments to the corolla; anthers, without any spur, or other appendix, one-celled, STYLE one, a little longer than the tube of the corolla.

POPULAR AND GEOGRAPHICAL NOTICE. Few shrubs are more

REFERENCE TO THE DISSECTIONS.

1, Corolla laid open, showing the stamens attached thereto. 2, The pistil.

ornamental than this, when its spreading branches display their lines of snow-white and enduring flowers. Like all the other species and genera of the order, it is a native of Australia, of the peculiar vegetation of which, it constitutes one of the most remarkable members. The resemblance of the plants of the tribe Epacridaceæ, to the Ericaceæ or Heath Tribe is so great, that any casual observer would, at the first glance, refer the plants of the former tribe to the latter. Nor is there any essential distinction between them, except that the Ericaceæ have 2-celled anthers, generally furnished with spur-like, or other appendages (see Plate I of Enkianthus reticulatus), while those belonging to the Epacridaceæ, have only 1-celled anthers, and are always devoid of any appendix. There is a very important difference, in respect to their geographical distribution; for while scarcely any of the Ericaceæ intrude within the limits of the Australian territory, none of the Epicridaceæ venture beyond it, finding in its climate and atmosphere the conditions best fitted for their organization and functions. The character of the pollen is worthy of observation. In Epacris and all the genera of the same section, having a capsular pericarp (seed-vessel) and the cells of the ovary many-seeded (such as the genus Sprengalia, of which the species Sprengalia incarnata is remarkable for the great duration of its flowers, which even till their seeds are ripened have nearly the same appearance as at their expansion) the pollen consists of three little spheres, whereas in the genera of the section, where the seed-vessel is generally closed, and the cells of the ovary one-seeded, the pollen is simple.

Introduction; Where grown; Culture. Seeds of this plant were received from New Holland, in 1829, by Henry Moreton Dyer, Esq., at that time, Vice President of the Horticultural Society.

It requires the protection of the greenhouse in winter, but may be placed out of doors in summer. Sweet says, the species "thrive best in a sandy peat soil, the rougher and more turfy the soil is, the better the plants will thrive: these should always be shifted in full pots, before they are turned out of doors in spring." It requires a free supply of water; and may be increased by cuttings.

Derivation of the Names.

Epacris, from επι epi, upon, and ακρις acris, a summit of a mountain, in reference to the place of growth of some of the species. Nivalis, snowy, in allusion to the whiteness of the flowers.

Synonymes.

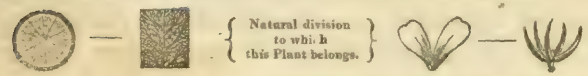
Epacris nivalis. Loddiges; Botanical Cabinet, f. 1821. Lindley; Botanical Register, f. 1539.

Solanum lanatum.

SOLA'NUM LANA'TUM.

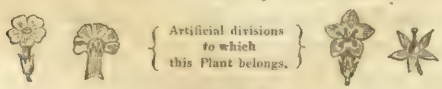
WOOLLY SOLANUM.

EXOGENÆ, OR DICOTYLEDONEÆ.



NATURAL ORDER, SOLANACEÆ.

COROLLIFLORÆ, OF DECANDOLLE.



PENTANDRIA, MONOGYNIA, OF LINNEUS.

No. 58.

GENUS. SOLANUM. *LINNEUS.* CALYX 4-15 dentatus lobatusve, persistens, sæpe accrescens. COROLLA rotata; tubo brevi; limbo magno, plicato, 5-angulato, interdum 4-6 lobato, patente. STAMINA 5, aliquando 4-6; filamentis subulatis, brevibus, interdum inæqualibus; antheris oblongis, bilocularibus, sæpius æqualibus, approximato-coadnatis, apice poris duobus dehiscentibus. OVARIUM subrotundum; stylus filiformis; stigma obtusum subsimplex aut 2-3-4 fidum. BACCA subrotunda. 2-3-4 locularis. *POUCHET*, Histoire des Solanees, p. 146.

SPECIES. SOLANUM LANATUM. *DUNAL.* CAULE aculeato arboreo, foliis oblongis solitariis geminisque, corymbis rameis subdichotomis. *DUNAL.* Histoire des Solanum, p. 205.

CHARACTER OF THE GENUS, SOLANUM, CALYX of 4 to 15 teeth or lobes, persistent, often accrescent. COROLLA rotate; tube short, limb large, plaited, 5-angled, sometimes 4-6 lobed, spreading. STAMENS 5, occasionally 4-6, filaments awl-shaped, short, sometimes unequal; anthers oblong, 2-celled, generally equal, approximating coadnate, dehiscing by two pores at the apex. OVARY roundish; style slender, stigma obtuse, either simple, or 2-3-4-cleft. BERRY roundish, 2-3-4-celled. SEEDS numerous, ovate, often compressed, surrounded by a thin diaphanous pulp.

DESCRIPTION OF THE SPECIES, SOLANUM LANATUM. A shrub, erect, from five to six feet high, above much branched, scarcely having prickles, but rough and woolly. LOWER BRANCHES smooth, with the exception of some prickles, woolly and of a rusty colour. LEAVES alternate, petiolate, shining, those of the young lower branches oblongo-lanceolate, angular, woolly on both sides; the upper leaves sometimes geminate, oblong, unequal at the base, woolly on the under side, roughish or hispid on the upper side. CALYX 5-cleft, woolly, seg-

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REFERENCE TO THE DISSECTIONS.

1, The perfect berry, with the persistent calyx. 2, A longitudinal section of the berry, showing the seeds.

ments ovate, acute, of different lengths. COROLLA pale purple or whitish, limb spreading, lobed, lobes irregularly notched, scarcely pointed. STAMENS 5, filaments short, anthers long, cylindrical, yellow, 2-celled, dehiscing by a small orifice at the apex of each cell. STYLE longer than the anthers, slender, stigma capitate. BERRY succulent, yellow, about the size of a nut.

POPULAR AND GEOGRAPICAL NOTICE. This species of Solanum is a native of Peru, growing in precipitous places, near the fortress of Huassanace. Of this vast genus, comprising above 300 species, some are natives of the temperate parts of the earth, but the greater number exist between the tropics of both hemispheres. In the colder parts of the world they are herbaceous, but in the warmer, shrubby plants; about one half the species are prickly. An apparent anomaly pervades the genus, inasmuch as while some species are wholesome, such as the common potatoe, (Solanum tuberosum), others are remarkably poisonous, such as the garden night-shade, (Solanum nigrum), and others. The poisonous property which some possess, seems to depend upon an alkaloid, termed Solania, which exists in the state of a malate or solanate, but which is not present in all parts of the plants, nor in every species in the same degree of concentration or of intensity. The fruit is frequently the part in which it resides, and in those species where it abounds in this locality, a pulpy matter is stated to surround the seeds, whilst the wholesome kinds are destitute of this pulp. If it exist in the common potatoe, it is by no means in a very concentrated state; and being diffused through the large quantity of starchy matter of the tuber, is quite harmless, at least after the application of heat in cooking, a mode by which many other acrid, but volatile, poisons are dissipated. The stalks of the potatoe, seem to possess it in a higher degree of concentration, for a tincture prepared from these, displays more narcotic power than tincture of hyoscyamus in an equal dose.

DERIVATION OF THE NAMES.

SOLANUM, from Solāre, to assuage, in reference to the sedative and soothing properties of certain of the species, employed in medicine: LANATUM, from lana, woolly, alluding to the woolly aspect of the plant.

SYNONYMES.

SOLANUM ASPERO-LANATUM, Flora Peruviana, II, p. 39, t. 174, Fig. b.

SOLANUM ASPERUM, Persoon Enchiridion, I, p. 229, not Vahl.

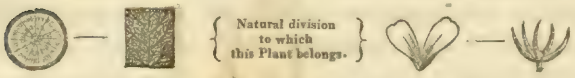
SOLANUM LANATUM, Dunal, Histoire des Solanum, p. 205. Sprengel Species Plantarum, I, p. 692.

Anthocercis viscosa

ANTHOCER'CIS VISCO'SA.

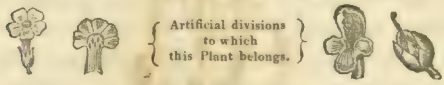
GLUTINOUS ANTHOCERCIS.

EXOGENÆ, OR DICOTYLEDONEÆ.



NATURAL ORDER, SOLANACEÆ.

COROLLIFLORÆ, OF DECANDOLLE.



DIDYNAMIA, ANGIOSPERMIA, OF LINNEUS.

No. 59.

GENUS. ANTHOCERCIS. *LABILLARDIERE.* CALYX 5-fidus. COROLLA campanulata, tubo basi coarctata staminifera; limbo 5-partito, æquali. STAMINA inclusa, didynama, cum rudimento quinti. STIGMA capitato-emarginatum. CAPSULA 2-locularis, 2 valvis, valvarum marginibus inflexis, placentæ parallelæ insertis. SEMINA reticulata. *BROWN.* Prodromus Floræ Novæ Hollandiæ, p. 448.

SPECIES. ANTHOCERCIS VISCOSA. *ROBERT BROWN.* FOLIIS obovatis glanduloso-punctatis margine scabriusculis: novellis ramulisque tenuissime pubescentibus, capsulâ ovatâ calycem subæquante. *BROWN.* Prodromus Floræ Novæ Hollandiæ, p. 448.

CHARACTER OF THE GENUS, ANTHOCERCIS. CALYX 5-cleft. COROLLA campanulate, contracted at the base of the tube, staminiferous; limb 5-parted, equal. STAMENS included in the tube, didynamous, with the rudiment of a fifth. STIGMA capitato-emarginate. CAPSULE 2-celled, 2-valved, margins of the valves turned inwards, inserted on the parallel placenta. SEEDS reticulated.

DESCRIPTION OF THE SPECIES, ANTHOCERCIS VISCOSA. A frutescent plant, erect, about 3 feet high. LEAVES articulated with the stem or branch, alternate, obovate, with glandular dots, rough or slightly serrated at the margin, attenuated at the base, scarcely petiolate, somewhat fleshy, dark green and smooth above, lighter green and carinate below. PEDUNCLES articulated, axillary, solitary, with two or three linear-lanceolate remote bracts, one-flowered; peduncles elongating when in the state of fructification. CALYX deeply 5-cleft, segments linear-lanceolate, persistent, somewhat spreading from the pressure of the tube of the corolla, becoming erect after that organ has fallen off. COROLLA not plaited in æstivation, large, white, campanulate; limb 5-cleft, segments spreading, oblong, obtuse, tube marked externally, but more distinctly internally, with green radiating

REFERENCE TO THE DISSECTIONS.

1, Stamen seen in front. 2, Corolla removed that the didynamous stamens may be seen. 3, Stamen seen from behind.

lines. Stamens 4, didynamous, attached to the base of the tube. Filaments short. Anther nearly round, 2-lobed, extrose. Stigma capitate, 2-lobed. Capsule 2-celled.

Popular and Geographical Notice. On the southern coast of New Holland this plant was found by Mr. Robert Brown, while attached to Captain Flinder's Expedition sent to explore that region; where Labillardiere had previously discovered the Anthocercis littorea. Mr. Cunningham has since described the Anthocercis albicans, and a fourth species has been sent from Swan River, by Mr. Fraser to Sir W. J. Hooker, who has called it Anthocercis ilicifolia. Thus all the species which we at present know belong to Australia, and it is probable that if any additional ones should be detected, they will be found in the same portion of the globe. Examples of certain types or forms of organization, whether of small extent, as a genus, or of larger, such as a tribe, being confined to peculiar regions, are of frequent occurrence, some of which we have already noticed, such as the Epacridaceæ, a limitation which contrasts strongly with the free and extensive range enjoyed by others; for example, that of the Samolus Valerandi, which may be found in every quarter of the globe. "If we study the physiology of plants" observes Dr. Royle, "as well as the circumstances controlling their growth, and the nature of their secretions, we find that vegetation is much affected by the different physical states of the soil and atmosphere, as well as by the supply of heat and light; hence we may conclude, that there are different sets of plants fitted by nature for the particular circumstances in which they are placed."

Introduction; where grown; Culture. Introduced to this country by seeds sent by Mr. Allan Cunningham, in 1822, to the Royal Gardens at Kew, gathered at King George's Sound. It is one amongst the handsomest greenhouse shrubs, and continues long to produce a succession of flowers in the early part of summer. Unlike many New Holland plants, it does not bear much water. It may be propagated by cuttings, and should be potted in peat, loam, and sand. Our drawing was made in June, in the Birmingham Botanic Garden.

Derivation of the Names.

Anthocercis, from Ανθος anthos, a flower, and Κερκις kerkis, a ray, alluding to the radiated manner in which the segments of the limb of the corolla are arranged. Viscosa, viscid or glutinous, from the clammy secretion of the glandular dots.

Synonymes.

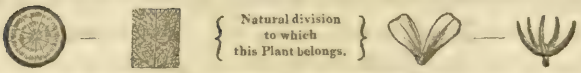
Anthocercis viscosa. Brown: Prodromus, p. 448. Hooker: Botanical Magazine, folio 2961. Lindley: Botanical Register, folio 1624.

Verbena Tweediana.

VERBE'NA TWEEDIEA'NA. var. Arraniana.

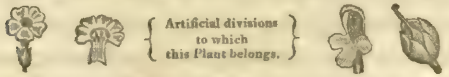
MR. TWEEDIE'S VERVAIN. Purplish-Flowered Variety.

EXOGNEÆ, OR DICOTYLEDONEÆ.



NATURAL ORDER, VERBENACEÆ.

COROLLIFLORÆ, OF DECANDOLLE.



DIDYNAMIA, ANGIOSPERMIA, OF LINNEUS.

No. 60.

GENUS. VERBENA. *LINNEUS.* CALYX quinque fidus, dente unico subbreviore. COROLLÆ limbus irregulariter 5-lobus. STAMINA inclusa. UTRICULUS 4-spermus, cito rumpens, ut maturi fructus caryopses sistant. *SPRENGEL.* Species Plantarum, I, p. 678.

SPECIES. VERBENA TWEEDIEANA. *HOOKER*, Pubescenti-hirsuta erecta suffruticosa ramosa, foliis ovato-lanceolatis acuminatis membranaceis grosse inæqualiter serratis basi cuneatis integerrimis in petiolum gracilem attenuatis, spica corymbosa, calycibus cylindraceis 5-costatis tubo corollæ $\frac{1}{3}$-brevioribus, limbo 5-lobo, segmentis cuneatis emarginatis sub-æqualibus. *HOOKER*, in Botanical Magazine, Folio 3541.

CHARACTER OF THE GENUS, VERBENA. CALYX 5-cleft, one of the teeth somewhat shorter than the rest. LIMB OF THE COROLLA irregularly 5-lobed. STAMENS included in the tube. UTRICLE 4-seeded, rupturing at an early period of its growth, so that the mature fruits appear as caryopses.

DESCRIPTION OF THE SPECIES, VERBENA TWEEDIEANA. VAR. ARRANIANA. A perennial suffruticose plant, pubescently hairy throughout, except the corolla. ROOT fibrous. STEM slender, 4-feet high, branched. LOWER LEAVES petiolate, entire at the base, from ovate-lanceolate to elliptic-lanceolate, slightly lobed, largely and irregularly toothed, scarcely acuminate; upper leaves sessile, narrower, toothed or notched, pointed. INFLORESCENCE, a terminal corymbose raceme, of elegant purplish flowers. PEDICELS very short, bracteate. CALYX cylindrical, 5-toothed, 5-ribbed, in the lower flowers of the raceme one-third shorter, in the upper nearly one half shorter than the tube of the corolla. TUBE OF THE COROLLA externally whitish, slender, limb spreading, large, oblique, 5-lobed. LOBES obtuse, emarginate. THROAT yellow, pulverulent, hairy. OVARY 4-celled. STYLE 1, stigma bifid.

POPULAR AND GEOGRAPHICAL NOTICE. This variety, which Mr. Niven has termed Arraniana, differs from the original specimens of

Verbena Tweedieana chiefly in its lower leaves, which are broader, less attenuate at the base, and less acutely pointed, and also in the colour of the flowers being more purplish. It is clearly a transition link between Verbena Tweedieana and Verbena incisa, figured by Sir W. J. Hooker in Botanical Magazine, folio 3625; and hence it may be doubted whether all the three plants ought not more properly to be grouped as one species, as Professor Don has done with many forms of Fuschia. Our plant partakes in a high degree of the beauty of the allied species, and to the introducers of these charming plants their countrymen, not only of the present but of all succeeding generations, owe a debt of gratitude, which it is alike impossible to calculate or discharge. We hold that those enterprising individuals who, having left their native land, seek to beautify it, and to give our gardens something of paradisaical loveliness, by collecting, and transmitting the seeds of those flowers, which they meet with in their wanderings, confer a benefit which cannot be too highly estimated, and should ever be gratefully acknowledged. The common Verbena officinalis, a native of Britain, now neglected, once held potent sway over the minds of our ancestors. "The Druids, both in Gaul and Britain, regarded the Vervain with the same veneration which they bestowed on the Misletoe, and like the Magi of the East, they offered sacrifices to the earth, before they cut this plant in the spring, which was a ceremony of great pomp." Philips's Flora Historica.

Introduction; where grown; Culture. Seeds were sent by Mr. Tweedie, in 1834, to Mr. Niven, of the Glasnevin Botanic Garden, Dublin, by whom a single plant was raised. To the courtesy of Mr. Niven we owe the drawing, and following instructive notice. "This plant may be propagated by seeds or cuttings; and grows best in sandy loam, in an airy and well exposed situation. It will be found another most interesting addition for bedding-out in the flower garden. It is a remarkably free-grower, and should be preserved in the greenhouse or frame, during winter, in small thumb pots, to be ready for turning out in spring. It flowers the whole summer."

Derivation of the Names.

Verbena, vervain, of uncertain derivation, perhaps from the Celtic, Farfaen. Tweedieana, in compliment to Mr. Tweedie, the botanical collector.

Synonyme.

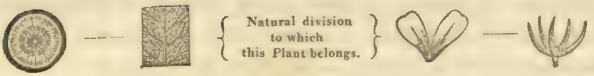
Verbena Tweedieana. Hooker, in Botanical Magazine, folio 3541.

Pimelea lanata

PIMELE'A LANA'TA.

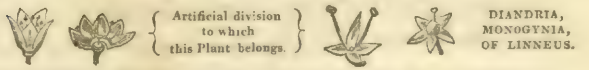
WOOLLY PIMELEA.

EXOGNEÆ, OR DICOTYLEDONEÆ.



NATURAL ORDER, THYMELACEÆ.

MONOCHLAMYDÆ, OF DECANDOLLE.



DIANDRIA, MONOGYNIA, OF LINNEUS.

No. 61.

GENUS. Pimelea. *Banks.* Perianthium infundibuliforme, limbo 4-fido, fauce esquamata. Stamina duo, fauci inserta, laciniis exterioribus opposita. Stylus lateralis. Stigma capitatum. Nux corticata, raro baccata. *R. Brown.* Prodromus Floræ Novæ Hollandiæ, p. 359.

SPECIES. Pimelea lanata. Foliis orbiculatis, ovato-rotundatisve, obtusis, subsecundo-adversis, planis, subtus lanato-tomentosis supra glaberrimis, *J. S. HENSLOW.*

Character of the Genus, Pimelea. Perianth (a calyx) funnel-shaped, its limb 4-cleft, and throat without scales. Stamens two, inserted in the throat, and opposite to the two outer laciniæ. Style lateral. Stigma capitate. Nut generally covered with a bark, rarely succulent.

Description of the Species, Pimelea lanata. Branches clothed with dense white tomentum. Leaves orbicular, the uppermost more or less ovate and obtuse, scarcely petiolate, plain or slightly concave. Their upper surface dark green, and very smooth and glossy; their under, covered with dense white somewhat woolly tomentum. They are placed opposite and decussate, but are twisted half way round on the petioles, so as to range vertically with the upper surfaces facing outwards, or towards the light, which arrangement somewhat conceals the tomentum beneath, and gives the plant a pleasing appearance. Inflorescence in terminal capitula, of about 20 flowers, subtended by about 4 leaves, nearly disposed as an involucrum. Flowers white, with a pink tinge towards the lower part of the tube. Calyx monosepalous, the margins of the 4 laciniæ somewhat inflexed. The tube is jointed, and falls off immediately above the germen, to which the lower portion adheres as a covering. The whole is tomentose

Reference to the Dissections.

1, the Calyx opened to show the position of the stamens, opposite the two outer segments. 2, the ovary a little swollen, with the style and small capitate stigma. 3, the solitary ovule. 4, nucleus, previous to appearance of the embryo.

on the outside. Stamens 2, with the free part of the filaments rising from the throat, and about the length of the calyx-limb. Anthers orange, oblong, 2-celled, erect, but united half way along the back to the filament. Ovary ovate, one-ovuled. Style exserted, unilateral. Stigma capitate, but small; both stamens and style are deflected at the throat, so as to lie flat upon the segments of the calyx.

Popular and Geographical Notice. This plant appears to be very closely allied to Pimelea nivea of Labillardiere Novæ Hollandiæ Plantarum Specimen, Vol. 1, Pl. 6, but differs in the margin of its leaves not being revolute, and in having the branches covered with very long and dense tomentum. It is highly probable that a more perfect acquaintance with these plants in their native localities, would enable us to detect several intermediate forms to those already enumerated, and prove many of them to be mere varieties and not true species; but in the present state of our knowledge we must be content to add one more to the list, without venturing to reduce it to an already described form. The Genus Pimelea is composed of elegant shrubs, inhabitants of rocky places in Australia and New Zealand. Many plants in the family to which this belongs (Thymelaceæ) have their inner bark remarkably silky in its texture, and among them is the Lagetta lintearia of Jamaica, from which the celebrated Lace-bark is procured; so called from the delicacy of its structure, and which is capable of being subdivided into numerous thin layers, each imitative of fine lace.

Introduction; where grown; Culture. The seed was sent in 1834, from Van Dieman's Land, to Alderman Copeland, and the plant from which our drawing was taken, flowered freely in 1836, and is now (May 1837) five feet and a half in height, covered with flowers from top to bottom. It is in the possession of Miss Copeland, of Leyton, and we are indebted to the pencil of Miss Hall for the drawing, who also obligingly furnished us with the fresh specimen from which our description has been made. The luxuriance with which this attractive plant grows, and the abundance of its flowers recommend it to the notice of the cultivator. Cuttings will strike root in fine sand under a bell-glass. The young plants should be potted in sandy peat.

Derivation of the Names.

Pimelea from πιμελη pimele, fat, on what account is not obvious, unless the fresh fruit of some of the species contains fatty matter. Lanata, woolly, in allusion to the kind of pubescence beneath the leaves and on the branches.

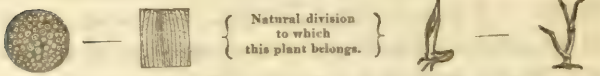
Sparaxis pendula.

Mair del

SPARAX'IS PEN'DULA.

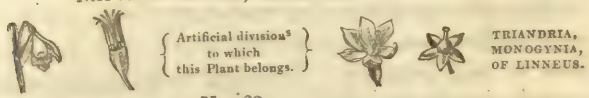
PENDULOUS-FLOWERED SPARAXIS.

ENDOGENÆ, OR MONOCOTYLEDONÆ.



NATURAL ORDER, IRIDACEÆ.

EPIGYNOSÆ, OF LINDLEY.



TRIANDRIA, MONOGYNIA, OF LINNEUS.

No. 62.

GENUS. Sparaxis. *Ker.* Perigonium corollinum superum, infundibuliforme, tubo brevi gracili, limbi ampli sexpartiti laciniis subæqualibus, stellato-patentibus. Stamina 3, tubo perigonii inserta, adscendentia, inclusa; filamenta subulata, antheræ lineares, dorso supra affixæ. Ovarium inferum, obtuse trigonum, triloculare. Ovula plurima, in loculorum angulo centrali biseriata. Stylus filiformis: stigmata 3, linearia, complicato-carinata, recurva. Capsula membranacea, obsolete trigona, subtorulosa, trilocularis, loculicido-trivalvis. Semina plurima subglobosa. *Endlicher.* Genera Plantarum, p. 168.

SPECIES. Sparaxis pendula. *Ker.* Foliis linearibus strictis scapo polystachyo duplo brevioribus, spicis pendulis multifloris.

Character of the Genus, Sparaxis. Perigone (perianth) corolla-like, superior, funnel-shaped, tube short, slender, limb large, six-parted, segments nearly equal, stellately spreading. Stamens 3, inserted on the tube of the perigone, ascending, included; filaments awl-shaped, anthers linear, attached by the back, somewhat above the base. Ovary inferior, obtusely 3-angled, 3-celled. Ovules several, arranged in two rows, along the central angle of the cells. Style filiform; stigmas 3, linear, complicately-keel-shaped, recurved. Capsule membranaceous, indistinctly 3-cornered, somewhat turgidly knotty, 3-celled, by loculicidal dehiscence 3-valved. Seeds numerous, subglobose.

Description of the Species, Sparaxis pendula. A perennial herbaceous plant, with a tuberous tunicated rhizoma, from which spring numerous tufts of leaves, from the centre of each of which tufts arise the scapes or flower-stalks. Leaves ensate, linear-acute, straight, nerved, 3-feet long, shorter than the scapes. Scapes slender, erect, panicled, pendulous at the top, pedicels having two capillary leaves at the base of each; spikes pendulous, secund; flowers large, of a lilac colour, beautifully veined, each flower placed between two membranous bracts, or spathas which are convulute, appearing as

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Reference to the Dissections.

1, Pistil. 2, Perianth laid open, shewing stamens. 3, Spathas with their lacerated point. 4, Seed-vessel cut transversely.

if lacerated, sessile. PERIANTH six-parted, sepals and petals uniform, oblong, obtuse. ANTHERS linear, dark purple. CAPSULE 3-celled, 3-valved, loculicidal, each cell containing two roundish brown seeds.

POPULAR AND GEOGRAPHICAL NOTICE. Thunberg found this plant in wet situations near Krumrivier, at the Cape of Good Hope. The moist locality in which it grows enables it to preserve some signs of life and beauty where all around is scorched by the power of an almost tropical sun, which occasions nearly the same effects, that cold does in high latitudes. The progress of vegetation in sandy districts is almost completely checked till the return of the rainy season, when it revives, and the desert "blossoms as the rose." Till this more favourable period arrives, bulbs and tubers lie protected under the earth, by their numerous scaly coats. Many bulbs might be found in regions which seem barren, and without a trace of vegetable life, were they traversed in the rainy season, or properly examined, by digging some inches under the surface, in the dry mould. Meyen in his voyage round the World, records the following. "5th February, (place) Cordilleras. The continued heat had so completely burnt up the whole plain which lay exposed to the sun's rays, that a few scattered halms of wild oats and some flowering shrubs were all that remained. On accidentally turning up the clayey soil, it was found completely filled with small bulbs, the flowers and leaves of which had long since disappeared. How beautiful must be the aspect of this plain, and all the declivities of these mountains in the spring of the year, when they are clothed with the splendid mantle of the liliaceæ. Here and there where there was some moisture to lessen the withering effect of the heat, were seen traces of this first beauty of the spring."

INTRODUCTION; WHERE GROWN; CULTURE. Introduced by Mr. Tate of Sloane Street, in 1825. Flowered in May, in the greenhouse of the Messrs. Pope, of Handsworth. A light sandy soil with plenty of water suits this plant. In warm summers the pot may be sunk at the side of any ornamental piece of water, which this graceful flower would contribute to beautify. A bright warm sun will expand its perianth, but so expanded our artist had no opportunity of drawing it.

DERIVATION OF THE NAMES.

SPARAXIS, from Σπαραςςω SPARASSO to tear, alluding to the torn-like spathas. PENDULA from the drooping appearance of the head of flowers.

SYNONYMES.

IXIA PENDULA. Thunberg: Dissertatio, No. 16. Prodromus 9, Floræ Capensis, I, 286. Linneus: Supplement, 91. Willdenow: Species Plant. I, 204.

WATSONIA PALUSTRIS. Persoon Synopsis, 45.

SPARAXIS PENDULA. Ker in text of Botanical Magazine, 1482. Sprengel: Sp. Pl. I, 149. Lindley: Botanical Register, 1360.

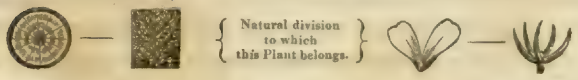
Fuschia fulgens

Mrs Withers del

FUCH'SIA FUL'GENS.

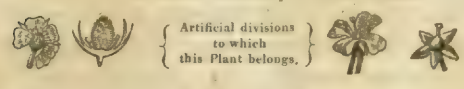
BRILLIANT FUCHSIA.

EXOGENÆ, OR DICOTYLEDONEÆ.



NATURAL ORDER, FUCHSIACEÆ.

CALYCIFLORÆ, OF DECANDOLLE.



OCTANDRIA, MONOGYNIA, OF LINNEUS.

No. 63.

GENUS. Fuchsia. (*Plumier.*) Calycis tubus basi ovario adhærens, supernè productus in tubum cylindraceum 4-lobum post anthesin articulatim deciduum. Petala 4 summo tubo inserta lobis alterna, rarius nulla. Stamina 8. Ovarium glandulâ urceolatâ coronatum. Stylus filiformis. Stigma capitatum. Bacca oblonga aut ovato-globosa, 4-locularis, 4-valvis, polysperma. *Decandolle.* Prodromus Systematis Naturalis Regni Vegetabilis, III, p. 36.

SPECIES. Fuchsia fulgens. (*Mocino* and *Sesse.* Flora Mexicana, inedita.) Ramis glabris, foliis oppositis petiolatis cordato-ovatis acutis denticulatis glabris, pediculis axillaribus flore brevioribus, superioribus racemosis, calycis lobis ovato-lanceolatis acutis petala acutiuscula superantibus, Ibid, p. 39.

Character of the Genus, Fuchsia. Tube of the calyx adhering to the ovary at the base, but above prolonged into a cylindrical 4-cleft tube, the lobes of which drop off, soon after the anthesis, by a distinct articulation. Petals 4, seldom none, inserted on the tube of the calyx, with the lobes of which they alternate. Stamens 8. Ovary crowned with an urceolate (pitcher-shaped) gland. Style filiform. Stigma capitate. Berry oblong or ovato-globose, 4-celled, 4-valved, many-seeded.

Description of the Species, Fuchsia fulgens. A Shrub, in its native country from 4 to 6 feet high, smooth, glaucous, tender, almost of the texture of a sub-succulent herbaceous plant, surface suffused with a vinous hue. Leaves opposite, thin, ovately cordate, acute, irregularly toothed or denticulate, ciliated, petiolate, petioles slightly pubescent, roundish, channelled, the lamina twice the length of the petioles. Flowers axillary, solitary, springing from the axils of the leaves on both sides of the stem, but so inclined as to form a secund pendulous raceme. Peduncles slender, about half an inch long. Ovary oblong, pubescent, 4-celled, many-seeded, ovules in double rows. Calyx about $2\frac{1}{2}$ inches long, funnel-shaped, ventricose at the base, slightly pubescent, of a fine vermillion colour; segments triangular, acute, greenish at the tips. Petals ovate, obtuse, a little shorter than the sepals, blood-coloured. Stamens 8, inserted on the

throat of the calyx, shorter than the sepals, opposite the petals, than which they are a little shorter; anthers often extrorsely resupinate.

Popular and Geographical Notice. This very striking species of Fuchsia, of which the first notice was given by Mocino and Sesse, is a native of Mexico. South America however is the great store-house of Fuchsias, and the species, particularly those of Peru, surpass even the present plant in splendour and the size of the flowers, of which it is sufficient to mention Fuchsia apetala (Ruiz) the tube of the flower being often five inches in length. As a few of the species extend into North America, inhabiting Mexico, so a very few stray into New Zealand, where in addition to Fuchsia excorticata the late Mr. Richard Cunningham discovered Fuchsia procumbens (Cunningham Mss.) likewise an apetalous plant. The occurrence of these species of an almost exclusively American genus confirm the sagacious remark of Robert Brown, that some resemblance exists between the Flora of New Zealand and that of America. (See General Remarks on the Botany of Flinders' Voyage, Appendix 2, p. 589).

Introduction; Where grown; Culture. The lovers of ornamental plants are indebted to the Messrs. Lee, of the Hammersmith Nursery, for the introduction of this glowing novelty amongst them. It was procured by these gentlemen through Mr. Louis Deschamps, who brought it from Mexico last year, (1837), and to their liberality we owe the permission to have the drawing made by our accomplished artist, Mrs. Withers. Nothing is more splendid than a bed or border of Fuchsias, and they require but little care, for as it is observed by Mr. Loudon, in his invaluable Arboretum and Fruticetum, "All the species and varieties hitherto introduced or originated, when planted in a dry soil, and a sheltered situation, in the neighbourhood of London, though they may be killed down to the ground by the frost, may have their stools preserved alive through the winter, by covering them with litter, haulm, or leaves, in such a way as to throw off the wet; and this covering being removed in spring, the plants will shoot up vigorously, and flower freely during the whole summer." This splendid species seems to require only the usual treatment.

Derivation of the Names.

Fuchsia, called after Leonhard Fuchs (Fox), one of the earliest botanical writers after the revival of letters. Fulgens, from the brilliancy of the flowers.

Synonymes.

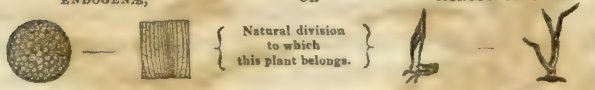
Fuchsia fulgens. Mocino and Sesse, in Decandolle: Prodromus, Pars III, p. 39. George Don: Dictionary of Gardening and Botany, Vol. II, p. 479. Botanical Register, 1.

Barbacenia purpurea

BARBACE'NIA PURPU'REA.

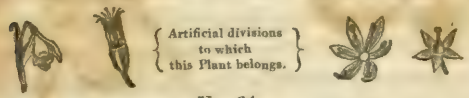
PURPLE-FLOWERED BARBACENIA.

ENDOGENÆ, OR MONOCOTYLEDONÆ.



NATURAL ORDER, HÆMODORACEÆ.

EPIGYNOSÆ, OF LINDLEY.



HEXANDRIA, MONOGYNIA, OF LINNEUS.

No. 64.

GENUS. BARBACENIA. *VANDELLI.* PERIGONIUM corollinum infundibuliforme, extus piloso-resinosum, tubo basi cum ovario connato, limbi sex-fidi laciniis æqualibus, erecto-patentibus. STAMINA 6, imis limbi laciniis inserta, erecta, inclusa; filamenta plano-compressa, apice tridentata, dente medio minore antherifero, antheræ lineares, medio dorso vel prope basim affixæ. OVARIUM inferum triloculare. OVULA in placentis e loculorum angulo centrali exsertis plurima. STYLUS triqueter, tripartibilis; stigma capitato-trigonum. CAPSULA infera, subtrigona, trilocularis, loculicido-trivalvis, valvis medio septigeris, placentas auferentibus. SEMINA plurima, angulata. *ENDLICHER*, Genera Plantarum, p. 172.

SPECIES. BARBACENIA PURPUREA. *HOOKER.* FOLIIS lineari-acuminatis carinatis spinuloso-serratis, scapo foliis longiore, ovario elongato lineatim tuberculato, antheris basi filamentorum affixis. *HOOKER*, in Botanical Magazine, folio 2777.

CHARACTER OF THE GENUS, BARBACENIA. PERIGONE (perianth of some writers) corolla-like, funnel-shaped, externally coated with resinous hairs, tube united at the base with the ovary, limb 6-cleft, segments equal, somewhat erect, spreading. STAMENS 6, inserted on the lower part of the segments of the limb, erect, included; filaments flat, compressed, 3-toothed at the apex, central tooth smallest, antheriferous, anthers linear, attached about the middle of the back or near the base. OVARY inferior, 3-celled. OVULES numerous, on placentæ standing out from the central angle of the cells. STYLE triangular, divisible into three portions; stigma capitate, 3-cornered. CAPSULE inferior, somewhat 3-cornered, 3-celled, becoming by loculicidal dehiscence 3-valved, the valves having a septum in the middle, bearing the placentæ. SEEDS numerous, angular.

DESCRIPTION OF THE SPECIES, BARBACENIA PURPUREA. STEM short, dichotomously divided, having at the base brown scales, higher up numerous long, linear, acuminate, flexuous or twisted, vaginating leaves, rigid, scarcely reflexed at the upper half, margins spinulose,

teeth remote, minute, pointing upwards. SCAPE OR FLOWER STEM considerably longer than the leaves, obscurely 3-cornered, scabrous, hairs pointing upwards, one-flowered. FLOWER erect, spreading, of a rich purple colour. PERIGONE (perianth) of six segments, united into a tube at the base, the 3 outer segments narrow, lanceolate, acuminate, reflexed, with dark parallel veins on the upper surface; 3 inner segments broader, undulating, more erect, obtuse, or emarginate, similarly veined. THROAT displaying 6 broad, linear, petaloid, purplish 2-cleft filaments, opposite the petals, to the base of which, by the back, is attached the linear erect anther, 2-celled, shorter than the filament; pollen white. OVARY inferior, oblong, somewhat ventricose, greenish, but marked with 6 purplish tubercular lines, having minute dots rising up between them. OVARY 3-celled, with large cordately perforated dissepiments, between which, in each cell, are two vertical plates, forming the placentæ the margins of which are lined with numerous oblong ovules. STYLE as long as the anthers, acute, 3-angular, purple, stigmata below the apex, having the appearance of 3 white oblong glands.

POPULAR AND GEOGRAPHICAL NOTICE. This genus consists of herbaceous perennials, natives of Brazil, of which 13 or 14 species are known, occurring between the 14° and 23° S. Lat. Though one or two were known to Vandelli, we are chiefly indebted for a more extensive acquaintance with them, to Von Martius, from whose travels, the following extract is taken. "We were particularly surprized, as we were ascending the steep Morro de Gravier, a continuation of Serra do Oiro Branco, at seeing some arborescent lilies, the thick naked stems of which, divided in the manner of a fork in a few branches ending in a tuft of long leaves, and being frequently scorched on the surface by burning of the meadows, are some of the most singular forms in the vegetable kingdom. The two species which have these forms, Barbacenia and Vellozia, are called in the country Canella 'd' Ema, and on account of the resin they contain, are much used for fuel, wood being scarce. They appear to thrive only on quartzy mica-slate, and are considered by the inhabitants as a characteristic mark of a country abounding in gold and diamonds. They are most frequently met with here at an elevation of from 2000 to 4000 feet, always accompanied by a variety of the prettiest shrubby Rhexias, Eriocaulon and Xyris." It is further observed, "All this part of the mountain (Serra Branca,) is less rich in gold than the northern tracts. But on the other hand, Flora has more lavishly endowed it with a diversity of flowers. The

Rhexias, in particular, are a great ornament. There is an endless variety of species, all low shrubs; the numerous, thin, profusely-leaved stalks, are covered with beautiful red and violet-coloured blossoms. Stately stems of blue Vellozias and gay Barbacenias, the representatives of liliaceous plants, principally adorn the stony eminences. Of the family of the Gentians, there are many species of Lisianthus, which call to mind the equality of the diffusion of certain families, through many remote countries." Spix and Martius's Travels in Brazil, II, 138 and 159.

The limited geographical range of the genera Vellozia and Barbacenia is not the only peculiarity connected with them, as the stem presents a remarkable organization. "This part consists of a central slender subcylindrical column, which never increases in diameter after its first formation, and which has the ordinary monocotyledonous (endogenous) structure. Outside of the column are arranged great quantities of slender fibrous roots, which cohere firmly by their own cellular surface, and form a spurious kind of wood, which is extremely like that of some kinds of Palm wood, only it is developed by constant additions to the very outside of the original stem. Something analagous occurs in Pandanus." Lindley: Natural System, 2 ed. p. 334.

A difference of opinion exists among systematic Botanists as to the tribe to which Barbacenia and Vellozia properly belong. Martius, Bartling, and Endlicher, (and Lindley in the first edition of his Natural System) refer them to Hæmodoraceæ, while Kunth places them under Bromeliaceæ. Don considers them as forming a group intermediate between Iridaceæ and Hypoxidaceæ, and designates it Velloziæ. Lindley has subsequently adopted Kunth's opinion, and removed them to Bromeliaceæ. The somewhat spiral position of the leaves of Barbacenia, resembling those of the Ananas or pine-apple, gives some countenance to this measure, but on the whole we lean to the view taken by Martius, who has a greater knowledge of them than any mere European botanist.

Introduction; Where grown; Culture. To the care and observation of the Honourable and Reverend William Herbert, of Spofforth, the lovers of new objects of cultivation are indebted for this plant. He picked the seeds out of a parcel of Brazilian moss, and was rewarded by this novel flower, in 1825. It is an attractive evergreen stove perennial, which still continues scarce in our gardens, and

therefore the more desirable. It requires to be potted in rough sandy peat; and judging from the observations of Von Martius, which we have quoted, it may readily be supposed that if small lumps of broken quartz, mixed perhaps with a little micacious sandstone were to constitute the necessary stratum of drainers, at the bottoms of the pots, the plant may be cheated into a belief that it is luxuriating on the golden mountains of Serra Blanca. Its roots are strong and numerous for its size, therefore it requires to be frequently removed into larger sized pots. If it be gradually hardened, and then turned into a border, in front of the stove or greenhouse, in June, it will grow vigorously and flower very freely till the middle of September. As this species of Barbacenia frequently perfects its seeds, on these we would recommend the chief dependance for increase; for although it may be propagated by division of its roots the plants do not readily recover this treatment. It should be kept in the stove, and probably would flourish with pretty nearly the same management as its near ally, the pine-apple. In the article previously referred to, in Dr. Lindley's Nat. Syst. it is observed, in reference to the genera belonging to this family, that "They are all capable of existing in a dry hot air without contact with the earth; on which account they are favourites in South American gardens, where they are suspended in the dwellings, or hung to the balustrades of the balconies; situations in which they flower abundantly, filling the air with their fragrance."

Derivation of the Names.

Barbacenia, after Barbacena, a Governor of Minas Geraes, in Brazil. Purpurea, purple, the colour of the flowers.

Synonyme.

Barbacenia purpurea. Hooker, Botanical Magazine, 2777.

Platystemon Californicum.

Mrs Withers del

PLATYSTE'MON CALIFOR'NICUM.

CALIFORNIAN PLATYSTEMON.

EXOGENÆ, OR DICOTYLEDONEÆ.

Natural division to which this Plant belongs.

NATURAL ORDER, PAPAVERACEÆ.

THALAMIFLORÆ, OF DECANDOLLE.

Artificial divisions to which this Plant belongs.

POLYANDRIA, POLYGYNIA, OF LINNEUS.

No. 65.

GENUS. Platystemon. *Bentham.* Flores trimeri. Sepala 3, hispida. Petala, 6. ordine duplici. Stamina subindefinita; filamentis petaloideis; antheris linearibus rectis. Carpella 9-12, collateralia, stigmatibus linearibus erectis simplicissimis; matura leviter cohærentia, indehiscentia, cartilaginea torulosa; in articulos transversos monospermos secedentia. Semina lævia, ecristata; albumine oleoso. *Lindley*: Botanical Register, folio 1679.

SPECIES. Platystemon californicum. *Bentham.* Foliis (phyllodiis?) linearibus palleliveniis, alternis et verticillatis, sæpe unilateralibus; floribus terminalibus et axillaribus, longe pedunculatis. Ibid.

Character of the Genus, Platystemon. Parts of the flower in a ternary series. Calyx of 3 sepals. Corolla of 6 petals, in two rows. Stamens numerous; filaments petaloid; anthers linear, straight. Carpels 9-12, collateral, stigmata linear, erect, simple: when ripe the carpels slightly cohere, are indehiscent, cartilaginous, knotty; separating into transverse one-seeded joints. Seeds smooth, not crested; albumen oily.

Description of the Species, Platystemon californicum. A herbaceous annual, erect, about a foot in height, glaucous, branched, rounded, smooth, except the margins of the leaves, the peduncles, the calyx, and ovaries, all which are sparingly furnished with stiff hairs. Leaves alternate, or occasionally somewhat verticillate, sessile, linear-oblong, entire, obtuse, veined, the lines parallel (resembling the venation of endogens). Peduncles axillary and terminal, about three times longer than the leaves, ascending, straight, one-flowered. Sepals 3, concave, caducous. Petals 6, disposed in two rows, ovate, pale yellow, the three interior petals smaller than the outer whorl. Stamens numerous, hypogynous; filaments petaloid, broad, the interior whorls broadest; anthers linear, dehiscing laterally; innate. Car-

Reference to the Dissections.

1, The ovary. 2, A stamen, to exhibit the broad filament.

PELS 9-12, hairy on the outer and lower portion, arranged in several circles, perfectly distinct; stigmata linear, erect. The ripe fruit, formed by the cohesion of the carpellary leaves, oval, bristly, crowned by the persistent styles, furrowed; ultimately separating into distinct carpels, which are knotted or lomentaceous, consisting of one-celled, one-seeded joints.

POPULAR AND GEOGRAPHICAL NOTICE. Mr. Menzies first met with this plant in California; but for the introduction of it into our gardens, we are indebted to the lamented Douglas. The interest of this flower as an ornament to our gardens, considerable as it is, falls far short of its importance in a botanical point of view. The ternary arrangement of the parts of the flower, a character not common in the order Papaveraceæ, and more especially the numerous distinct carpels bring it into an approximation with the order Ranunculaceæ; which is, perhaps, rendered nearer by the leaves being phyllodia, a like condition of the leaves existing in Ranunculus Lingua and graminea. The lomentaceous character of the carpels indicates some affinity to the Cruciferæ. This remarkable state of the seed vessel has its prototype in the genus Hypecoum, of the order Papaveraceæ, and the two genera obviously form the transition link, through Trollius to the Ranunculaceæ. The calyx in both tribes is generally noted for its fugacious character, which belongs unfortunately to our present plant. This disposition to fall off soon after the expansion of the flower, has supplied the poet with one of his emblems of the fleeting nature of human enjoyments:

> But pleasures are like poppies spread,
> You seize the flower, its bloom is shed;
> Or like the snow-falls in the river,
> A moment white—then melts for ever.—BURNS.

INTRODUCTION; WHERE GROWN; CULTURE. Though seeds were sent by Mr. Douglas, in 1834, to the Horticultural Society, where our drawing was made, the first plants raised produced only a few seeds which failed to vegetate; so that it must have been again introduced. It is sufficiently hardy, flowering freely in June and July in the borders, where it ripens seeds abundantly. It possesses some odor of an agreeable kind.

DERIVATION OF THE NAMES.

PLATYSTEMON, from πλατυς, platus, broad, and στημων, stemon, a stamen, referring to the breadth of the filaments. CALIFORNICUM, from California.

SYNONYMES.

PLATYSTEMON CALIFORNICUM, Bentham: Trans. of Horticultural Society, Vol. I, New Series, p. 405. Lindley: Botanical Register, folio 1679. Hooker: Botanical Magazine, 3579.

Dipodium punctatum.

Mrs Taylor del.

DIPO'DIUM PUNCTA'TUM.

DOTTED DIPODIUM.

ENDOGENÆ, OR MONOCOTYLEDONEÆ.

Natural division to which this Plant belongs.

NATURAL ORDER, ORCHIDACEÆ.

GYNANDROSÆ, OF LINDLEY.

Artificial divisions to which this Plant belongs.

GYNANDRIA, MONANDRIA, OF LINNEUS.

No. 66.

GENUS. Dipodium. *Robert Brown.* Perianthium patens, petalis sepalisque æqualibus. Labellum subconforme, utrinque infra medium auriculatum, disco barbatum, basi saccatum et cum columna connatum. Columna erecta, marginata, semiteres. Anthera membranacea, bilocularis? Pollinia 2, oblique biloba, caudiculis duabus glandulæ communi affixis. *Lindley*: Genera and Species of Orchideous Plants, 186.

SPECIES. Dipodium punctatum. *Robert Brown.* Squamis radicalibus distantibus, labello recto disco pubescente. Ibid, p. 186.

Character of the Genus, Dipodium. Perianth spreading, petals and sepals equal. Lip nearly similar, having an auricle attached to each side below the middle, the disk bearded, saccate at the base, and united to the column. Column erect, margined, roundish. Anther membranous, perhaps two-celled? Pollen masses 2, obliquely two-lobed, attached to a common gland, by two little stalks (caudiculæ.)

Description of the Species, Dipodium punctatum. A terrestrial plant with a fibrous root, some of the fibres thick, succulent and horizontal, the rest slender and perpendicular. Stem about 1½ to 2 feet high, of a brownish purple, round, smooth, devoid of leaves, but having vaginating scales, which at the base of the stem are imbricated, higher up remote; scales short, obtuse. Inflorescence racemose. Flowers purple. Raceme cylindrical, loose; peduncles of a bright purple, at first erect, afterwards, horizontal or drooping. Perianth brownish purple, spotted with red or blood-coloured dots; sepals and petals linear oblong, nearly equal. Labellum (lip) oblong, three-lobed, pubescent at the base, in the central part of which is a furrow, saccate, connected with a short attachment to the base of the column; three-lobed; lateral lobes narrow, falcate, recurved, they as well as the disk hairy, the central lobe oblong, flat, apiculate, con-

tracted at the base, the hairs limited to a line along the middle. Column erect, roundish, truncate, glandulose at the margin; clinandrium with little teeth. Stigma short, transverse. Pollen masses two, furrowed behind, with two little stalks (caudiculæ) attached to a sublunate or crescent-shaped gland.

Popular and Geographical Notice. The orchidaceous plants which we have hitherto figured, have been of the kind termed epiphytes, but the present species is a terrestrial one. This character might have been predicted of it in some degree, from its native place being in a higher latitude than the former subjects of our plates. A reduction of temperature attends this removal from the equator, and the air is no longer capable of holding in suspension a sufficient quantity of aqueous vapour, charged with the materials of nourishment for plants growing on the branches of trees. All the orchidaceous plants of Europe are terrestrial, and deck our meadows and slopes, instead of hanging from the spreading arms of trees, like most of those of tropical countries. The closer vicinity of New Holland, and Van Dieman's Land, to the Southern Pole, likewise causes the orchidaceous plants of that region to seek nourishment directly from the earth, and they are consequently terrestrial. This species is found in New South Wales, near Port Jackson, and likewise in Van Dieman's Land. The leafless character seems common to the genus, existing in the only other known species, Dipodium squamatum, a native of New Caledonia.

Introduction; Where grown; Culture. This accession to the charming orchidaceous plants under culture, was imported by the Messrs. Loddiges, in 1835. To their liberality we owe the opportunity of figuring it, having blossomed in March, 1837. It grows in a pot, standing on the shelf of the conservatory, not requiring a stove heat.

Derivation of the Names.

Dipodium, from Δις dis, two, and πους ποδος, a foot, referring to the two stalks of the pollen masses. Punctatum, from punctum, a point or dot, in allusion to the dots on the flowers.

Synonymes.

Dendrobium punctatum. Smith: Exotic Botany, I, 21, plate 12. Robert Brown: Prodromus Floræ Novæ Hollandiæ, p. 331. Lindley: Botanical Register, folio 1980.

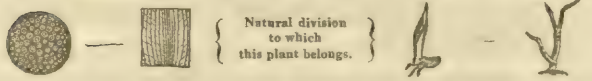
ANIGOZAN'THUS MANGLE'SII.

Pl. after Pl. 74

Var. Angustifolia.

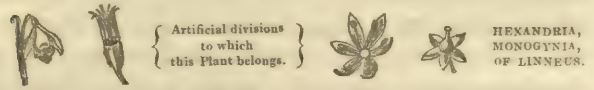
MR. MANGLES'S ANIGOZANTHUS.

ENDOGENÆ, OR MONOCOTYLEDONÆ.



NATURAL ORDER, HÆMODORACEÆ.

EPIGYNOSÆ, OF LINDLEY.



HEXANDRIA, MONOGYNIA, OF LINNEUS.

No. 67.

GENUS. ANIGOZANTHUS. (*LABILLARDIERE*). PERIGONIUM (perianthium) corollinum extus lanatum, tubo basi cum ovario connato, elongato, tandem deciduo, limbi sexfidi laciniis subæqualibus supra secundis. STAMINA fauci perigonii inserta, adscendentia; filamenta filiformia antheræ loculis connectivo anticè adnatis. OVARIUM cum perigonii tubo connatum, triloculare. OVULA in placentis e loculorum angulo centrali prominentibus plurima. STYLUS filiformis; stigma simplex. CAPSULA infera, subglobosa, trilocularis, apice loculicido-trivalvis. SEMINA plurima. *ENDLICHER.* Genera Plantarum, p. 172.

SPECIES. ANIGOZANTHUS MANGLESII. *DON.* CAULE tomento persistente longitudinaliter vestito, antheris muticis filamento 5-plò longioribus, stigmate capitato. *D. DON*, in Sweet's British Flower Garden, New Series, III, 265.

CHARACTER OF THE GENUS, ANIGOZANTHUS. PERIGONE resembling a corolla, externally woolly, the tube united at the base with the ovary, elongated, at last deciduous, the segments of the 6-cleft limb nearly equal, taking a secund direction above. STAMENS 6, inserted on the throat of the perigone, ascending; filaments slender, the cells of the anther anteriorly adnate to the connective. OVARY united with the tube of the perigone, 3-celled. OVULES numerous, attached to placentæ which project from the central angle of the cells. STYLE slender, stigma simple. CAPSULE inferior, subglobose, 3-celled splitting at the top, by a loculicidal dehiscence, into 3 valves. SEEDS numerous.

DESCRIPTION OF THE SPECIES, ANIGOZANTHUS MANGLESII. A perennial herbaceous plant, tufted, with a fasciculated root, composed of thick fibres. LEAVES uniform, erect, from half to 1½ feet long, smooth, entire, apex cuspidate, point brown, rigid, cauline leaves semivaginating at the base. STEM round, erect, nearly three feet high, branched above, clothed, particularly towards the upper part near the flowers, with a short, thick, crimson down, formed of branched hairs. FLOWERS large, shewy, in spiked racemes. PEDUNCLES

REFERENCE TO THE DISSECTIONS.

1, Perigone laid open, shewing the stamens and their attachments. 2, a stamen detached. 3, Ovary cut vertically, surmounted by the style. 4, transverse section of ovary shewing the 3 cells and seeds.

springing from opposite ensate bracts: pedicels, round, attended by short reddish bracteolæ, all which parts are clothed with brownish red down. Perigone tubular, cylindrical, from 2 to 3 inches long, sometimes splitting longitudinally, densely clothed with thick plumose hairs, base swollen roundish, of an orange or blood-colour, which verges to a yellowish green towards the top of the tube: limb erect, divided into 6 lanceolate, pointed, equal segments; segments green on the inner side. Stamens 6, the upper ones somewhat projecting, inserted on the mouth of the tube, filaments short. Anthers linear, blunt, somewhat recurved, two-celled, orange, nearly five times longer than the free portion of the filaments, cells opening lengthwise. Ovary ovato-oblong, 3-celled. Ovules numerous, attached to a longitudinal placenta. Style slender, longer than the tube, glabrous, stigma capitate.

Popular and Geographical Notice. The present plant is a native of Swan River, but whether the same as that described by Professor Don may be doubted. It bears such resemblance to the original Anigozanthus rufa of Labillardiere as to inspire a belief that it may be identical with it: if merely a variety of Anigozanthus Manglesii it is certainly a much handsomer specimen than the one figured in Bot. Reg. t. 2012, the chief character of which, lies in its having a few scattered hairs along the margins of the leaves.

Introduction; Where grown; Culture. Seeds were sent in 1833, by Sir James Sterling, Governor of Swan River Settlement, to Robert Mangles Esq. Whitmore Lodge, Berks, whose very intelligent gardener, Mr. Donald Mackay, gives the following account of the treatment. "The seeds were sown in August, 1833, and the young plants were potted off, and kept in an airy part of the greenhouse during winter. Early in the spring they were repotted, and in April they were planted out in a border, composed of maiden loam, leaf mould, and bog earth, in equal proportions, with a slight mixture of pounded chalk, in which the plants were found to thrive amazingly, shewing flower at the age of 10 months. A cold frame will protect them well enough in winter." Brit. Flow. Gard. 265. Our drawing was made in the Birmingham Botanic Garden, where the plant continued to flower nearly three months, in the Greenhouse.

Derivation of the Names.

Anigozanthus; *ἀνισχω*, I raise up, and *ανθος* a flower, from bearing up, as if proudly, its crown of flowers. Manglesii, in compliment to Mr. Mangles.

Synonyme.

Anigozanthus Manglesii. Don: in Sweet's British Flow. Gard. III, t. 265.

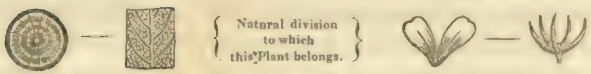
Bossiaea linophylla.

Mab. 16

BOSSIÆ'A LINOPHYL'LA.

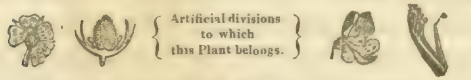
FLAX-LEAVED BOSSIÆA.

EXOGENÆ, OR DICOTYLEDONEÆ.



NATURAL ORDER, LEGUMINOSÆ.

CALYCIFLORÆ, OF DECANDOLLE.



DIADELPHIA, DECANDRIA, OF LINNÆUS.

No. 68.

GENUS. Bossiæa. *Ventenat.* Calyx bilabiatus, labio superiore majore semibifido obtuso. Stamina omnia connexa. Legumen plano-compressum pedicellatum polyspermum, margine utroque incrassatum. Semina strophiolata. *Decandolle.* Prodromus Systematis Universalis Regni Vegetabilis, II, p. 116.

SPECIES. Bossiæa linophylla. *R. Brown.* Ramis compressis foliosis, foliis linearibus marginibus recurvis, leguminibus 1-locularibus. Ibid, 117.

Character of the Genus, Bossiæa. Calyx two-lipped, the upper lip larger, nearly two-cleft, obtuse. Stamens united into a monadelphous tube. Pod flatly compressed, stalked, many-seeded, both margins thickened. Seeds strophiolated.

Description of the Species, Bossiæa linophylla. Shrub erect, about three feet high, branched, branches leafy, compressed, flexile. Leaves stipular, stipules subulate, alternate, spreading, linear, somewhat pointed, margins recurved. Flowers axillary, solitary, nearly clothing the branches from the base to the tip. Calyx greenish, two-lipped, upper lip two-cleft, under lip 3-toothed. Corolla of 5 petals. Standard large, orbiculate, slightly emarginate, of an orange-yellow, with brownish red streaks externally, and a brownish red spot, with radiating lines, towards the base or claw. Wings small, spreading, orange streaked with red. Keel of two slightly cohering petals. Stamens 10, monadelphous. Style pointed. Pod compressed, one-celled, many-seeded.

Popular and Geographical Notice. This pleasing little plant is a native of the south-west coast of New Holland, where it was first

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Reference to the Dissections.

1, The calyx. 2, The alæ or wings. 3, The keel or carina formed of two cohering petals. 4, The vexillum or standard. 5, The stamens forming a monadelphous tube around the pistillum. 6, The pistil seen after two stamens have been removed.

discovered by Robert Brown: a few other species are found on the south-west of the Australian territory, but the greater number belong to the east coast; one only has been found in Van Dieman's Land. All the species yet known have yellow flowers. Thus the peculiar type of vegetation which these plants present, has its locality assigned to it, and observes limits in its geographical distribution, with as unvarying uniformity, as their flowers assume the hue which characterizes them. Other remarkable points may be noted in the genus; particularly the disposition of the branches to become flat, and thereby resemble leaves, the office of which they frequently discharge; the leaves themselves being often wanting, as happens in the species Bossiæa Scolopendra, Bossiæa rufa, and others. In this respect they resemble certain speceis of Phyllanthus. They thus serve to diversify the aspect of the foliage and landscape scenery, in a country where an unusual degree of monotony in the appearance of the woods is everywhere observable.

Introduction; Where grown; Culture. It was first introduced to British cultivators in 1803. Our drawing was made in the month of June from a fine plant grown in the Birmingham Botanic Garden. It does not require more protection than the conservatory affords, in which it freely unfolds its lively blossoms in May and June. The following notice respecting its culture occurs in the Botanical Cabinet, of the Messrs. Loddiges, from which we take the liberty of extracting it. "It is not easily increased, except by seeds. A light loam with a little peat mixed, is the proper soil for it. It is not particularly tender, and only requires the common greenhouse protection, with a moderate quantity of water. Planted out in the conservatory it grows far more luxuriantly, and flowers much better than when confined in a pot."

Derivation of the Names.

Bossiæa, so called after M. Bossieu Lamartiniere, one of the companions of La Perouse. Linophylla, from λινον linon, flax; and φυλλον phullon, a leaf, the leaves resembling those of the common flax.

Synonymes.

Bossiæa linophylla. R. Brown: Hortus Kewensis, Ed. 2, Vol. IV, p. 266. Sims: Botanical Magazine, t. 2491. Loddiges' Botanical Cabinet, t. 174. Decandolle: Prodromous, II, p. 117.

Euphorbia pumicea.

EUPHORBIA PUNI'CEA.

CRIMSON-FLOWERED EUPHORBIA.

EXOGENÆ, OR DICOTYLEDONEÆ.

Natural division to which this Plant belongs.

NATURAL ORDER, EUPHORBIACEÆ.

MONOCHLAMYDEÆ, OF DECANDOLLE.

Artificial divisions to which this Plant belongs.

DODECANDRIA, TRIGYNIA, OF LINNEUS.

No. 69.

GENUS. EUPHORBIA. *LINNEUS.* Involucrum androgynum 4-5-fidum, extus appendiculis glandulosis, (Petala Linnei, Nectaria aliorum.) FLORES masculi peripherici: pedicelli incerti numeri,s inguli cum singulis staminibus articulati. GERMEN pedicellatum, centrale. STYLI 3, 2-fidi. CAPSULA 3-cocca. *SPRENGEL*: Species Plantarum, Vol. III, p. 758.

SPECIES. EUPHORBIA PUNICEA. *SWARTZ.* Umbella sub-5-fida, radiis 3-fidis, bracteis splendide puniceis oblongis acutis, appendiculis involucri cotyloideis, foliis spathulatis subtus glaucis. *SPRENGEL*: Species Plantarum, Vol. III, p. 790.

CHARACTER OF THE GENUS, EUPHORBIA. INVOLUCRE androgynous, 4-5 cleft, externally furnished with glandular appendages. Those pedicels which are arranged around the central one, are variable in number, each bearing a single stamen, with which it is articulated. OVARY pedicellate, central. STYLES 3, each 2-cleft. CAPSULE formed of three cocci.

DESCRIPTION OF THE SPECIES, EUPHORBIA PUNICEA. STEM woody, in the native country attaining 15 to 20 feet in height, branching near the top; branches smooth, dichotomous, spreading, swollen at the points of bifurcation, and bearing towards their summits leaves which are crowded, almost sessile, oval, lanceolate, somewhat acute, or pointed, of a deep green above, glaucous beneath, often of a red colour at their base. INFLORESCENCE of about 5 monœceous pedicellate capitula, arranged as an umbel. PEDICELS pubescent bearing 2 large bracteæ arranged like partial involucres a little below each capitulum. These bracteæ are sessile, oblong, somewhat acuminate, of a rich crimson colour; they are more or less abortive on the innermost pedicel, and are sometimes all crowded together in the form of a general involucrum, when the part of the pedicel below them is not well developed, (see Botanical Magazine, Vol. 45, Pl. 1961). The true involucres

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REFERENCE TO THE DISSECTIONS.

1, The involucre with its flowers, and glandular appendages. 2. A staminiferous flower. 3, The ovary.

(or *anthodia* surrounding the capitula) are fleshy, urceolate, deep crimson, pubescent, hairy within, and bear from 5 to 6 bright yellow oval cup-shaped glands on the margin. Staminiferous flowers 12 to 15 in each capitulum, each composed of a single stamen, jointed on a small pedicel. Pistilliferous flower solitary in each capitulum; the ovarium globose greenish, on a pedicel which becomes longer than the involucrum, inclines to one side, and curves downwards, the style short reddish, branching into 3 obtuse black stigmata; at the base of the floral pedicel are numerous filamentous bracts. CAPSULES smooth, roundish, of the size of a small cherry: seeds smooth, brown.

POPULAR AND GEOGRAPHICAL NOTICE. This handsome species of Euphorbia, is a native of Jamaica, growing among stones on mountains in the interior. An acrimonious juice is found in this species, and in almost all euphorbiaceous plants; yet it is strange, as remarked by Dr. Lindley, that from such plants should be obtained caoutchouc, a most innocuous substance. But what appears still more extraordinary is the fact, that silk is not improbably a modification of the caoutchouc of these plants, elaborated by the silk-worms, which it has been maintained feed exclusively on milky-juiced and caoutchouc-yielding plants. Such at least seems to be the legitimate inference from the extensive generalization of Dr. Royle, whose statement we subjoin.

"In a paper read to the British Association, at Bristol, on the plants which yielded caoutchouc, "I observed that they all belonged to the milky-juice families of Cichoraceæ, Lobeliaceæ, Apocynaceæ, Asclepiadaceæ, Euphorbiaceæ, and Artocarpeæ, a tribe of Urticaceæ. In the first place it may be observed that many of the plants of these families are remarkable for the strength and tenacity of the fibre they yield for rope-making: secondly, that bird-lime is prepared from plants belonging to families which yield caoutchouc, as from the apocyneous Voacanga in Madagascar; and in India, from different species of Ficus and Artocarpus. But the most interesting fact which I obtained from the investigation, was one most unexpected, and the least connected with the subject. Having been previously employed in considering the proper means for extending the cultivation of silk in India; it struck me as singular, that so many of the plants which silk-worms prefer, next to the mulberry leaf, should be found in those families which yield caoutchouc. Thus, in England, the lettuce and dandelion leaves, belonging to Cichoraceæ, and in India, Ficus religiosa, belonging to Artocarpeæ, have been ascertained to be the best sub-

stitutes for the leaves of the mulberry; while the Arindy silk-worm of India, Phalæna Cynthia, feeds upon those of the castor-oil plant, Ricinus communis, belonging to Euphorbiaceæ. Considering that a circumstance of this nature was not likely to be accidental, I was induced to think that it depended upon the presence of some principle common to all these vegetables, and therefore that caoutchouc (perhaps in a modified state) might really be contained in the juice of the mulberry, though this is described as not being milky. I therefore requested Mr. Sevier, who has made so many discoveries in the properties of caoutchouc, to ascertain whether my conjecture was well-founded. In a few days he informed me that the mulberry-tree sap was of a milky nature, and did actually contain caoutchouc, especially on dry and bright sunny days."

Since this was written it has been stated in the newspapers, that a species of Scorzonera, which belongs to the natural family of Cichoraceæ, has been found a good substitute for the mulberry leaf, in France. We have also been informed that a caterpillar which forms a very large cocoon, and spins a tough but coarse kind of silk, feeds on the leaves of the South-American caoutchouc tree, Siphonia elastica. This is but one of the important and interesting results which may be expected to follow from studying and arranging plants in groups, according to their affinities, as has been attempted by what is termed the Natural Method. Led away by the apparent simplicity of an artificial arrangement of plants, botanists neglected the strong proofs furnished by the instinctive propensities of the whole animal kingdom, that plants which agree in structure generally possess similar properties. It was long known that certain animals fed on particular plants, and both during the last century and the present, this fact has been adduced as an evidence of the paternal care of the Creator, in providing food convenient for all his creatures, "so that each should have its allotted portion" (See Stillingfleet's Tracts; Art. "The Swedish Pan," translated from the Pan Suecicus, in Amœnitates Academicæ, Vol. II; also, Church of England Magazine, Vol. III, p. 211); but it is available also to shew the correctness of botanical analogies. In this way has Decandolle (Essai sur les Propriétés Médicales des Plantes) applied it, and it is so much the more convincing, that the proof is thus drawn from a source incapable of bias or prejudice. A few of the examples may be quoted. The Cynips Rosæ, and Cynips Salicis, the Cionus Scrophulariæ, and Hypera Rumicis feed upon *several*, sometimes *all*, the species of the genera of plants mentioned; but upon no

species belonging to any other tribe of plants. And indeed, the fact of the Cionus Scrophulariæ feeding on species of Verbascum may be allowed to decide the point of the genus Verbascum belonging to the Scrophulariaceæ, and not to the Solanaceæ, as some think it does. The Meloe vesicatoria, (Spanish blistering fly) gives the preference to the ash, then to the lilac, or privet, and last to the olive, all members of the tribe Oleaceæ. This insect is never found on any plant of the Jasminaceæ, though it is not uncommon on willows, from which it is remarkable that manna may be obtained, as well as from the Ornus Europæa, or flowering ash. The Pontia Brassicæ or Cabbage Butterfly feeds only on Cruciferous plants, with the solitary exception of the Tropæolum majus, or Indian cress, the similarity existing between which and some Cruciferous plants, has procured for it the name of Nasturtium. While the Tinea (flavella) of Reaumur, the natural food of which is the Astragalus glycyphyllus, in the absence of that, whatever variety may be presented to it, will only feed on some other leguminous plant.

These examples, the number of which might easily be increased, may convince every one of the advantage of following a Natural Method of classification, to discover which, Linneus devoted the latter portion of his life, leaving it upon record as his opinion, that "The Natural Method, as it was the first, so will it ever be the highest, object of botany." *Robert Dickson.*

Introduction; where Grown; Culture. This splendid tropical subject was first introduced to Great Britain from Jamaica, in 1778. To the kindness of John Wilmore Esq. of Oldford, we owe the present opportunity of figuring this plant. It requires to be kept in the stove. It may be propagated by cuttings; but to prevent the exhaustion and decay of these by an exudation of their milky sap, they should be nearly separated from the plant and then left three or four days till the sap has coagulated, so as to prevent further waste of it. They may then be wholly cut through and struck under glass. Further practical directions shall be given at a future opportunity.

Derivation of the Names.

Euphorbia, so called after Euphorbus, physician to Juba, king of Mauritania. Puniceus, scarlet, from Punicus, of or belonging to Phœnicia, famous for its dye of purple, said to be obtained from a species of shell-fish of the genus Murex.

Synonymes.

Euphorbia punicea. Swartz: Prodromus, p. 76. Flora Indiæ Occidentalis, II, p. 873. Hortus Kewensis 2, p. 143. Smith: Icones pictæ, III, t. 3. Jacquin: Icones Plantarum rariorum III, t. 484. Collectanea, 2, p. 179. Sprengel: Species Plantarum, III, p. 790. Botanical Register, 190. Botanical Magazine, 1961. Botanical Cabinet, 1901.

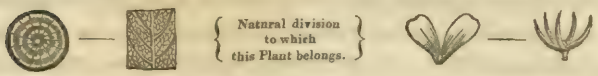
Poinsettia pulcherrima

POINSETTIA PULCHERRIMA. var. Albida.

SHOWY POINSETTIA.

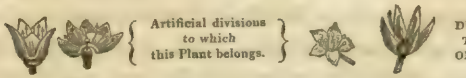
Variety, White-bracted.

EXOGENÆ, OR DICOTYLEDONEÆ.



NATURAL ORDER, EUPHORBIACEÆ.

MONOCHLAMYDEÆ, OF DECANDOLLE.



DECANDRIA, TRIGYNIA. OF LINNEUS,

No. 70.

GENUS. Poinsettia. *Graham.* Involucrum monophyllum, ovatum androgynum, basi 5-loculare, extus appendiculo unico nectarifero. Flores pedicellati, nudi; masculi bifariam in singulis loculis ordinati, monandri; fœminei solitarii, centrales, germen trilobum; ovulum solitarium singulis lobis. *Graham* in litt.

Character of the Genus, Poinsettia. Involucre monophyllous, ovate, androgynous (bearing both male and female flowers), 5-celled at the base, having a single external nectariferous appendix near the top. Flowers pedicellate, naked; the staminiferous flowers arranged in two rows in each compartment, each flower consisting of one stamen (monandrous); the pistilliferous flowers solitary; ovary three-lobed, containing one ovulum in each lobe.

Description of the Species, Poinsettia pulcherrima. var. albida. Shrub erect, branched, branches hollow, round, when young obscurely four-angled. Leaves alternate, sometimes opposite, petiolate, ovate, acute, unequally lobed, veined, veins often parallel, limb of the largest leaves about five inches long, and three broad, the mid-rib not in the centre, pubescent on both sides, but especially the under, which is of a lighter green. Bracts resembling the leaves, but smaller, the largest three inches long, not so much lobed, but unequal, and in the present variety of a white, or very pale yellow colour. Panicle cymose; pedicels articulated; involucres likewise articulated, greenish yellow, turbinate, or ovate, toothed, externally marked by five furrows, with which internally alternate five falcate processes, which are narrow at the mouth of the involucre, but become broader as they descend towards the lower part, where they meet in a

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Reference to the Dissections.

1, External view of involucre, shewing its articulated pedicel. 2, Sections of involucre, showing the pistilliferous flower in the centre, surrounded by the staminiferous flowers. 3, Pistilliferous flower with one perfect staminiferous, and the hairy bracteal scale at its base. 4, Nectariferous appendage. All the natural size, or only slightly magnified.

central column, thus dividing the base of the involucre into five compartments; erect fimbriæ arising from their margins partially divide the upper part of the involucre into a similar number of cells; teeth of the involucre numerous, connivent, whitish, woolly on the inner side; near the top of the involucre are several appendages, or nectaries, of which four are abortive and one perfect, which is round, entire, peltate, and so constructed at the margin, as to appear two-lipped. STAMINIFEROUS FLOWERS about 10-12, in double rows in each compartment of the involucre, from the base of which they spring, each accompanied with a scale, which is hairy towards the top; monandrous. STAMENS articulated on small pedicels, filaments whitish, anthers two-lobed, yellow. PISTILLIFEROUS FLOWERS solitary, central, supported on a short stalk, naked, ovary three-lobed, styles three, each style simple, (?) bifurcate at the apex. OVULE solitary in each cell.

POPULAR AND GEOGRAPHICAL NOTICE. This variety was discovered about 400 miles from the city of Mexico, by Wm. Bates, Esq., by whom it was sent to Charles Tayleure, Esq., Toxteth-Park, near Liverpool. Whether it is a distinct species, or merely a variety of pulcherrima, is somewhat doubtful; we deem it safer to regard it only as a variety, rather than create new species on imperfect data. Poinsettia pulcherrima was in flower in the Liverpool Garden, at the same time, a coincidence which further disposes us to think that they are the same; and this view we are happy to have strengthened by Professor Graham, who has carefully compared both plants. A white milky juice, flows from any wounded part. Large drops of clear sweet fluid collect at the mouth of the nectariferous appendix.

INTRODUCTION; WHERE GROWN; CULTURE. The plant from which our drawing was made in December, was obligingly supplied from the Garden of the Liverpool Botanical Society, to which it had been presented by Charles Tayleure Esq. This gentleman had also received the red-bracted Poinsettia pulcherrima from Wm. Bates, Esq. previous to its introduction from Philadelphia by Mr. James Mc Nab, so that it was by his exertions in the gardens of England before the specimen from which the drawing in the Botanical Magazine, 3493, was made. It should be kept in a cool stove or warm greenhouse.

DERIVATION OF THE NAMES.

POINSETTIA, so called in honour of J. R. Poinsett, the United States Consul at Mexico, (Author of Notes on Mexico, 8vo., London, 1825), who rediscovered the red-bracted Poinsettia pulcherrima, which had been marked in Wildenow's Herbarium as Euphorbia pulcherrima. PULCHERRIMA, superlative of pulcher, fair. ALBIDA, from albus, white, alluding to the pale colour of the bracts.

Telopea speciosissima.

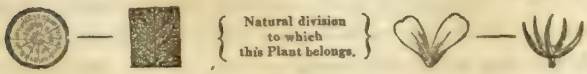
Mlle Maund del.

Fig 2 2/3 natural size
" 3. size of nature.

TELO'PEA SPECIOSIS'SIMA.

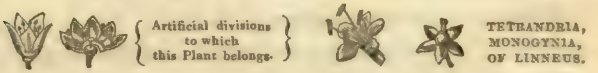
MOST SHEWY TELOPEA.

EXOGENÆ, OR DICOTYLEDONEÆ.



NATURAL ORDER, PROTEACEÆ.

MONOCHLAMYDEÆ, OF DECANDOLLE.



TETRANDRIA, MONOGYNIA, OF LINNEUS.

No. 71.

GENUS. Telopea. *R. Brown.* Perianthium irregulare, hinc longitudinaliter fissum inde 4-fidum. Stamina apicibus concavis perianthii immersa. Glandula hypogyna unica, subannularis. Ovarium polyspermum, pedicellatum. Stylus persistens. Stigma obliquum, clavatum, convexum. Folliculus unilocularis, cylindraceus. Semina apice alata, ala hinc immarginata inde vasculosa, nervo oblique recurrente. Involucrum (racemi vel corymbi) imbricatum, deciduum. *Brown.* Prodromus Floræ Novæ Hollandiæ I, p. 388.

SPECIES. Telopea speciosissima. Foliis cuneato oblongis inciso-dentatis venosis cum ramulis involucrisque glaberrimis. Ibid.

Character of the Genus, Telopea. Perianth irregular, being sometimes longitudinally split, sometimes 4-cleft. Stamens hid in the concave points of the perianth. Gland hypogynous, single, subannular. Ovary many-seeded, stalked. Style persistent. Stigma oblique, club-shaped, convex. Follicle one-celled, cylindrical. Seeds winged at the apex, wing sometimes immarginate, sometimes vascular, the nerve obliquely recurrent. Involucre (whether of the raceme or corymb) imbricated, deciduous.

Description of the Species, Telopea speciosissima. A Shrub, which in its native country becomes 8 or 10 feet high, with definite branches, which are simple, round, and wand-like. Leaves scattered, exstipulate, oblong, wedge-shaped, obtuse, toothed or incised, from 4 to 8 inches long, attenuate at the base, smooth, veined, green on the upper surface, lighter almost glaucous beneath. Flowers forming a terminal raceme, which from the aggregation of the flowers has a capitate appearance, surrounded by an involucre of numerous lanceolate veined leaves, of the richest crimson, somewhat downy on the upper surface. Each flower pedicellate, with one bract to each pair of footstalks. Sepals of the perianth cohere at the base, except

Reference to the Dissections.

1, Perianth, with the pistil partially liberated. 2, Seed vessel and seed. 3, Single seed, with its wing.

at the back of the flower, till the anthers cause them to separate. SEGMENTS long, linear, hollow at the apex. STAMENS 4, filaments short, anthers yellow, kidney-shaped, lodged in the concave pits at the apex of each sepal. OVARY stalked, STYLE long, slender, curved. STIGMA large, obtuse. PERICARP a coriaceous follicle, cylindrical, smooth, recurved, splitting along the ventral suture. SEEDS several, flattish, having a long narrow wing attached to the apex.

POPULAR AND GEOGRAPHICAL NOTICE. Of all the splendid productions of New Holland, none surpass the present plant, which literally dazzles the eyes of the beholders, when decked in all its brilliancy in its native land, where it flowers in October. The name among the Aborigines is Waratah, by Europeans it is sometimes termed Tulip tree; but this must not be confounded with the Liriodendron or Tulip tree of North America. Like some of the Banksias of New Holland, the tube of the flower is charged with honey, a property which causes it to be still more prized by the natives. It is not uncommon in the vales on the east coast of New Holland, near Port Jackson, in stony places, particularly when somewhat shaded. See Bennet's Wanderings in New South Wales.

INTRODUCTION; WHERE GROWN; CULTURE. It was introduced many years ago, by living plants, sent from Sidney Cove, to the Dowager Lady de Clifford, Nyn Hall, near Barnet, Hertfordshire. The plant from which our drawing was made flowered in the greenhouse of W. Moore Esq., of Wychdon Lodge, Staffordshire. This gentleman had a drawing made of the plant, with the use of which he most politely favoured us, as well as the flower itself. We know of no other instance of its blossoming in this country for several years past. His gardener, Mr. Thomas Vickerstaff, informs us that the plant which is of a single shoot, $2\frac{1}{2}$ feet high, was potted in a mixture of sand, peat, and leaf-mould, and was at all times sparingly watered.

DERIVATION OF THE NAMES.

TELOPEA, from Τηλωπος a thing seen at a distance, the brilliant head of flowers rendering the plant visible from afar. SPECIOSISSIMA, superlative of speciosus, most shewy, alluding to the splendour of the flowers.

SYNONYMES.

TELOPEA SPECIOSISSIMA. Brown: Transactions of Linnean Society, Vol. X. p. 198.

EMBOTHRIUM SPECIOSISSIMUM. Smith: New Holland, 19, t. 7. Sims: Botanical Magazine, 1128.

EMBOTHRIUM SPECIOSUM. Salisbury: Paradisus Londinensis, III.

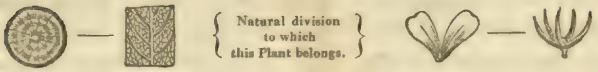
EMBOTHRIUM SPATHULATUM; Cavanilles.

Hovea purpurea

HO'VEA PURPU'REA.

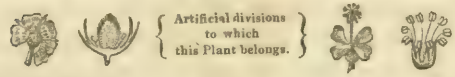
PURPLE-FLOWERED HOVEA.

EXOGENÆ, OR DICOTYLEDONEÆ.



NATURAL ORDER, LEGUMINOSÆ.

CALYCIFLORÆ, OF DECANDOLLE.



MONADELPHIA, DECANDRIA, OF LINNEUS.

No. 72.

GENUS. Hovea. *Robert Brown.* Calyx bilabiatus, labio superiore semibifido lato retuso, inferiore tripartito. Carina obtusa. Stamina omnia connexa aut decimo superné plus minus libero. Legumen sessile, subrotundum, ventricosum dispermum. Semina strophiolata. *Decandolle:* Prodromus Systematis Universalis Regni Vegetabilis II, p. 115.

SPECIES. Hovea purpurea. *Sweet.* Foliis lineari oblongis obtusis mucronulatis suprà glabris subtus tomentosis, pedicellis petiolo brevioribus geminis. *Lindley:* Botanical Register, folio 1423.

Character of the Genus, Hovea. Calyx two-lipped, upper lip semibifid, broad, retuse, lower lip three parted. Keel obtuse. Stamens all united into a monadelphous tube, or the tenth stamen more or less detached at the upper part. Legumen or pod sessile, roundish, swelling, two-seeded. Seeds strophiolated.

Description of the Species, Hovea purpurea. A shrub, six feet high, branched, bushy, branches thickish, round or slightly angled, covered with a greyish pulverulent down. Leaves alternate, petiolate, stipulate; stipules simple, small, subulate; linear, oblong, obtuse, either with a minute point or hardened at the apex, slightly revolute at the margins, upper surface very deep green, slightly reticulated, smooth; under surface densely clothed with an arachnoid down, grey in the old leaves, or a rusty colour in the expanding leaves; mid-rib conspicuous on both, but especially on the under surface. Flowers axillary, clothing the upper branches, geminate, pedicellate; pedicels shorter than the petioles of the leaves: flowers purple, diverging to each side of the branches, every flower provided with 3 bracteoles, which are ovate, adpressed, of a rusty brown colour, the two superior nearly equal to the teeth of the calyx, the inferior smaller and more remote. Calyx densely covered with down; upper lip truncate, emarginate, lower lip

Reference to the Dissections.

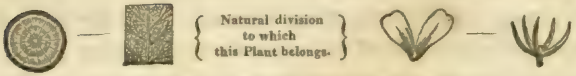
1, The standard. 2, Flower from which the standard has been removed. 3, The keel. 4, The stamens.

Quisqualis Indica.

QUISQUA'LIS IN'DICA.

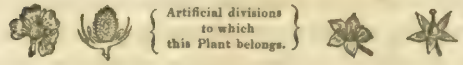
INDIAN QUISQUALIS.

EXOGENÆ, OR DICOTYLEDONEÆ.



NATURAL ORDER, COMBRETACEÆ.

CALYCIFLORÆ, OF DECANDOLLE.



DECANDRIA, MONOGYNIA, OF LINNEUS.

No. 73.

GENUS. Quisqualis. *Rumphius.* Calycis tubus suprá ovarium longissime productus gracilis deciduus, ore 5-fido. Petata 5 ovali-oblonga obtusa calycinis dentibus majora. Stamina 10 exserta, calycis fauci inserta, alterna breviora. Ovarium ovato-oblongum 4-ovulatum. Stylus filiformis obtusus exsertus, inferné tubo calycis adglutinatus. Drupa sicca 5-angularis 1-sperma. Cotyledones carnosæ maximæ plano-convexæ. *Decandolle.*

SPECIES. Quisqualis Indica. *Linneus.* Pubescens, bracteis ovato-rhombeis aristato-acuminatis sub quoque flore, petalis ovali-oblongis adpressé pubescentibus. Ibid. p. 23.

Character of the Genus, Quisqualis. Tube of the calyx slender, deciduous, greatly prolonged beyond the ovarium, rim 5-cleft. Petals 5, oval-oblong, obtuse, larger than the calycine teeth. Stamens 10, protruding, inserted on the throat of the calyx, the alternate ones shorter. Ovary ovato-oblong, containing 4 ovules. Style filiform, obtuse, exserted, agglutinated below to the tube of the calyx. Drupe dry, 5-angled, 1-seeded. Cotyledons fleshy, flattish convex.

Description of the Species Quisqualis Indica. A climbing shrub, pubescent throughout, except the tube of the calyx, branched, branches round, leaves opposite or alternate, petiolate, ovato-lanceolate, slightly cordate at the base, upper surface dark green, mid-rib and nerves strongly marked. Inflorescence in terminal panicles, each flower with an ovately rhomboidal, acuminately awned bract. Tube of the calyx long, slender, somewhat club-shaped towards the apex or throat, five-cleft at the top, segments lanceolate, acute. Petals 5, spathulato-ovate, blunt, inserted on the rim of the calyx, with the segments of which they alternate; when the petals first expand in the morning they are white, become reddish about noon, and rose-coloured in the evening, presenting next day a blood-red colour. These changes are more or less rapid according to the intensity of the light. Stamens 10, in two rows, attached to the inner side of the throat of the calyx,

Reference to the Dissections.

1, Back of anther. 2, Front of ditto. 3, Petal. 4, Tube laid open.

the stamens of each row alternating with those of the other, upper row protruding. Ovary adherent to the base of the tube of the calyx, one celled, 5-angled; style long, slender, protruding beyond the anthers.

Popular and Geographical Notice. As the name implies, India is the native land of this elegant and interesting plant. It belongs both to the islands and peninsula of India, and if Drs. Wight and Arnott (Prodromus Floræ Peninsulæ Indiæ Orientalis, I, p. 318), are correct in reducing several supposed species (Q. pubescens, Q. glabra, Q. Loureiri, Q. villosa) to mere varieties of the present plant, it has a still wider range, being found in Cochin-china. The whole order Combretaceæ consists of plants known only in the tropical, none being found in the extra-tropical, parts of Asia, Africa, and America. They number amongst them many remarkable for their beauty, and several for their utility. One of the latter is thus mentioned by Humboldt. "Our host was employed in joining large pieces of wood by means of a kind of glue called guayca. This substance, used by the carpenters of Angostura, resembles the best glue extracted from the animal kingdom. It is found perfectly prepared between the bark and the alburnum of the Combretum guayca. It probably resembles in its chemical properties birdlime, the vegetable principle obtained from the berries of the misletoe, and the internal bark of the holly. An astonishing abundance of this glutinous matter issues from the twining branches of the vejuco de guayca when they are cut. Thus we find within the tropics a substance in a state of purity, and deposited in peculiar organs, which in the temperate zone can be procured only by the processes of art." Personal Narrative, vol. VI, part I, p. 5.

Introduction; Where grown; Culture. The introduction of this plant took place in 1815. The specimen from which our drawing was made was obligingly communicated by Mr. Cameron, Curator of the Birmingham Botanic Garden. The best soil is a mixture of loam and peat, and cuttings root freely in sand in a moist heat, under a hand-glass. Few more beautiful objects can be seen than the Quisqualis Indica trained either along the rafters, or covering the trellis-work of a stove, as it goes on flowering for several months in summer; and the changeable character of the flowers give it constantly a new aspect.

Derivation of the Names.

Quisqualis, a singularly compounded word, from Quis, which, and qualis, kind, as its class and order were doubtful. Indica, Indian.

Synonymes.

Quisqualis Indica. Rumphius Amboina, 5, t. 38. Linneus: Species, 556. Botanical Register, 492. Botanical Magazine, folio 2033. G. Don, Dictionary of Gardening and Botany, II, 667. Decandolle: Prodromus III, 23.

JUSTI'CIA SPECIO'SA.

SHEWY JUSTICIA.

EXOGENÆ, OR DICOTYLEDONEÆ.

Natural division to which this Plant belongs.

NATURAL ORDER, ACANTHACEÆ.

COROLLIFLOREÆ, OF DECANDOLLE.

Artificial divisions to which this Plant belongs.

DIANDRIA, MONOGYNIA. OF LINNEUS,

No. 74.

GENUS. JUSTICIA. *LINNEUS.* CALYX 4-5-fidus bracteatus. COROLLA 2-labiata. ANTHERÆ 2-loculares, loculis sæpe distantibus. CAPSULA ovalis 2-locularis, loculis dispermis, dissepimento retinacula seminum gestante adnato. *SPRENGEL.* Species Plantarum, vol. I, p. 27.

SPECIES. JUSTICIA SPECIOSA. *ROXBURGH.* PEDUNCULIS axillaribus pauciforis proliferis, bracteis oppositis foliaceis, foliis petiolatis cordato-ovatis obtusis rugosis, caule erecto. *SPRENGEL.* Ibid, p. 85.

CHARACTER OF THE GENUS, JUSTICIA. CALYX 4-5 cleft, bracteate. COROLLA 2-lipped. ANTHERS 2-celled, cells often separate. CAPSULE oval, two-celled, cells two-seeded, dissepiment bearing the chords of the seeds or hooked processes of the placenta adnate.

DESCRIPTION OF THE SPECIES, JUSTICIA SPECIOSA. SHRUB tall, spreading; stem and old branches ash-coloured, younger branches green, glabrous, rounded, scarcely striated. LEAVES opposite, petiolate, ovate, acuminate; lower and larger leaves subcordate, and crenate, dark green, roughish above, paler beneath; nerves oblique, prominent on the under surface. PEDUNCLES axillary and terminal, often proliferous, few-flowered. BRACTS forming a double involucre, ciliated on the margins; the outer circle composed of four leaflets, two of which are oblong, two spathulato-oblong; the inner circle consisting of four upright, lanceolate, smaller, leaflets, surrounding each flower. CALYX small, of 5 deep, linear, acute segments. COROLLA purple, externally pubescent; tube very long, curved, singularly twisted, limb divided into an upper and under lip, which by the curvature of the tube are transposed; the upper (naturally under) lip broad, blunt, three-toothed, with one large, and several small dark spots at the base; lower lip entire, or obscurely two-toothed. STAMENS two; filaments slender, long, extending much beyond the throat. ANTHERS of two cells, one obliquely above the other. OVARY ovate, with a fleshy annular disk. STYLE nearly as long as the stamens. STIGMA obscurely two-cleft.

Popular and Geographical Notice. Among the numerous splendid productions of tropical forests, this has been pronounced by Dr. Roxburgh, than whom scarcely any could be a more competent judge, "to be one of the greatest ornaments of the forests of the interior of Bengal." Many of the peculiar characters of the tribe of Acanthaceæ may be studied in this plant; one of the most remarkable of which is the position of the two cells of the anthers, which are not opposite as in most instances of two-celled anthers, but obliquely one above the other. Nees von Essenbeck imagines that this irregularity is connected with a general tendency to unequal dichotomy, which is more particularly indicated by one of the opposite leaves being unequal, by the bases of the leaves being frequently oblique, by the one-seeded spikes with two rows of abortive, and two of flower-bearing bracts, &c. The attachment of the seeds to the placentæ is also very peculiar. The seed-vessel opens with considerable elasticity and propels the seeds to a distance. Several species of Justicia are fragrant, while others yield colouring principles. It is probable that the juice of the flowers of the Justicia speciosa would furnish the best pigment for colouring drawings of the flower, as is the case with the juice of the Tradescantia.

Introduction; Where grown; Culture. This species first found a place in British gardens in 1826. It was raised by Lady Bunbury, of Barton Hall, Suffolk, from seeds received by her from St. Helena, to which island it had probably been introduced from the Botanic Garden, Calcutta. The plant from which we were kindly permitted to have a drawing made, flowered in the stove of Robert Barclay, Esq. of Leyton, Essex. The Justicia speciosa may be grown either as a stove or greenhouse plant, but its beauty is most perfectly developed in the stove, where it makes a noble appearance during autumn and part of the winter. It should be potted in rather strong rich loam, and have plenty of pot room. May be rapidly increased by cuttings at any season.

Derivation of the Names.

Justicia, in compliment to Mr. James Justice, a Scotch Gardener, author of "The British Gardener's Director." He lived about the middle of the last century. Speciosa, shewy, from the handsome appearance of the flowers.

Synonymes.

Justicia Speciosa, Roxburgh: Flora Indica. Sprengel: Species Plantarum, vol. I, p. 85. Botanical Magazine, folio 2722.

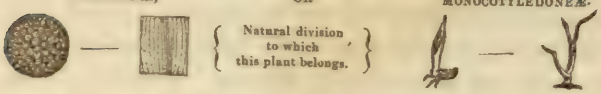
Anigozanthus Manglesii

Maxillaria cristata.

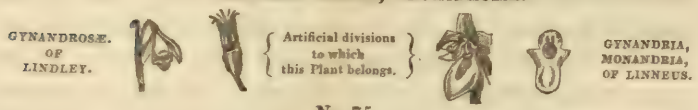
Wm Withers del.

MAXILLA'RIA CRIS'TATA.

CRESTED MAXILLARIA.



NATURAL ORDER, ORCHIDACEÆ.



No. 75.

GENUS. MAXILLARIA. *RUIZ* and *PAVO*. PERIGONII patentis vel conniventis foliola exteriora lateralia cum basi producta columnæ in saccum connata; interiora subconformia. LABELLUM cum basi producta columnæ articulatum, sessile trilobum, cucullatum. COLUMNA semiteres, aptera. ANTHERA incompletè bilocularis, opercularis. POLLINIA 2, bipartibilia vel integra, caudiculis brevibus glandulæ transversæ affixa. *ENDLICHER*. Genera Plantarum, p, 197.

SPECIES. MAXILLARIA CRISTATA. *LINDLEY*. Pseudo-bulbis ovatis sulcatis monophyllis, foliis oblongo-lanceolatis plicatis, scapo pendulo bifloro squamis laxiusculis vaginato, floribus explanatis, sepalis petalisque lanceolatis acutis æqualibus, labello multo minore tripartito carnoso: laciniis lateralibus falcatis intermediâ rotundato cristato-fimbriatâ utrinque unidentatâ, ungue suberistato disco bidentato. *LINDLEY*: Botanical Register, folio 1811.

CHARACTER OF THE GENUS, MAXILLARIA. The perigone (perianth) spreading or connivent, with the external folioles lateral, and prolonged at the base, united to the column so as to form a sack; the internal folioles nearly uniform. The labellum which has its base prolonged, articulated with the column, sessile, three-lobed, and cucullate. COLUMN roundish without wings. ANTHER imperfectly 2-celled, operculate. POLLEN MASSES 2, separable into two or united, affixed by little tails to the transverse gland.

DESCRIPTION OF THE SPECIES, MAXILLARIA CRISTATA. PSEUDO-BULBS ovate, furrowed, producing each one leaf. LEAVES oblong-lanceolate, plaited, scape pendulous, two-flowered, vaginating with loose scales. FLOWERS spreading. SEPALS (external folioles) nearly two inches long, whitish interruptedly marked with red lines and bands. PETALS (internal folioles) equal and uniform, blood-red at the top, spotted at the base, white on the back. LIP purple, claw green, crest and teeth white; the crest of the intermediate segment fimbriated with moniliform hairs: the claw formed of 4-6 little claspers

straight and submoniliform. TEETH of the disk compressed, spreading, crenate at the margin, the hinder one double the size of the others. COLUMN green at the base, yellow at the apex, awl-shaped on both sides, the beak extremely long and awl-shaped. The tail of the pollen masses very long, the gland small and subtriangular.

POPULAR AND GEOGRAPHICAL NOTICE. Trinidad has supplied this additional species of a genus, most of which belong to the tropical parts of America. This, like the others, is an epiphyte, growing on old dead branches of trees near the Mud Lake. Singular as the appearance generally is of the tropical Orchidaceæ, this one out-runs the greatest number of them, in the very remarkable character of its lip. The hairs of the crest will be found to furnish interesting objects for inspection with the microscope, as most necklace-like hairs are, such as those of the Tradescantia Virginica or Spider-wort. The seeds of many orchidaceous plants also supply very beautiful subjects for microscopic observation. The difficulties which attended the study and investigation of orchidaceous plants have been greatly diminished by the persevering labours and acuteness of Robert Brown. (See his Prodromous Floræ Novæ Hollandiæ, p. 309; and his Memoir on the Fertilization of the Orchideæ, Trans. of the Linnean Soc. vol. 16) of L. C. Richard and his son, A. Richard; by the Drawings of Bauer (Illustrations of the Genera and Species of Orchidaceous Plants;) and by the various writings of Dr. Lindley, especially his last beautiful work, entitled Sertum Orchidaceum.

INTRODUCTION; WHERE GROWN; CULTURE. It was first received in this country about 1835, by Mr. Knight, of the King's Road Nursery, Chelsea; and for its singularity and beauty has been added, at considerable cost, to several of the best collections. The plant from which our drawing was made, flowered at the Messrs. Loddiges in July. It requires to be kept in the stove; and perhaps cannot be better treated than by being suspended from the branch of a tree, so as to imitate, as much as possible, its natural site. It is usually potted in sandy peat, broken into pieces about the size of a walnut.

DERIVATION OF THE NAMES.

MAXILLARIA has been adopted as a name for this genus from the resemblance which the lip of the flower bears to the maxillæ or jaws of some insects. CRISTATA, crested, from cresta, a crest, that organ in this species being very singular.

SYNONYMES.

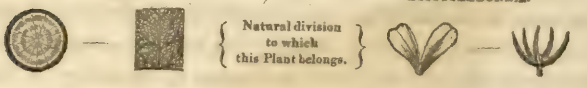
MAXILLARIA CRISTATA. Lindley: in Botanical Register, folio 1811.

Thunbergia grandiflora.

THUNBER'GIA GRANDIFLO'RA.

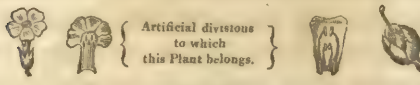
LARGE FLOWERED THUNBERGIA.

EXOGENÆ, OR DICOTTLEDONEÆ.



NATURAL ORDER, ACANTHACEÆ.

COROLLIFLORÆ, OF DECANDOLLE.



DIDYNAMIA, ANGIOSPERMIA. OF LINNEUS.

No. 76.

GENUS. THUNBERGIA. *LINNEUS.* CALYX duplex externe diphyllus; interne subduodecim-dentatus. CAPSULA bilocularis rostrata.

SPECIES. THUNBERGIA GRANDIFLORA. *ROXBURGH.* Scandens, foliis cordatis angulatis acuminatis hispidiusculis, pedunculis 1-floris, calyce interno nullo, antheris barbatis calcaratis. *SPRENGEL:* Species Plantarum, Vol. II, p. 828.

CHARACTER OF THE GENUS, THUNBERGIA. CALYX in a double series; the external whorl of two leaves, the internal generally of 12 teeth. CAPSULE two-celled beaked.

DESCRIPTION OF THE SPECIES, THUNBERGIA GRANDIFLORA. A climbing shrub. STEM smooth with somewhat tumid joints. LEAVES opposite, petiolate, irregularly angled or lobed, cordate at the base, acuminate at the apex; both the petiole and lamina of the leaves clothed with soft hairs; upper surface green and marked with some strong primary veins, from which diverge less prominent ones; under surface paler. FLOWERS solitary, axillary, on peduncles as long as the petioles of the leaves. SEGMENTS of the calyx in a double series; the outer consisting of two ovate folioles, rough from having small black points scattered over them, the internal segments sometimes wanting, when present generally 12, resembling teeth. COROLLA large, of a blue or lilac colour. TUBE at first tapering, then enlarging so as to form a bell-shaped throat, arched on the upper side, and convex on the under: limb 5-lobed, spreading, lobes ovate-oblong, rounded, lower lobe larger than the rest; traversed by dark purple veins, somewhat resembling those of the leaves. STAMENS 4, the filaments of the upper pair curved at the base, the shorter pair compressed, gibbous. ANTHERS oblong, bearded, and furnished with a spur. OVARY superior, conical, resting on a lobulate annular disk. STYLE equal in length to the stamens. STIGMA concave.

Popular and Geographical Notice. This species, like most of those which we at present know of the genus Thunbergia, is a native of the East Indies, adorning uncultivated places of the province of Bengal, even in the immediate neighbourhood of Calcutta. It flowers there during the rainy season. The species which are found in Africa, or the islands adjacent, only serve to confirm the accuracy of Robert Brown's observation, that there is a greater analogy between the plants of equinoctial Africa and equinoctial India, than between those of India and equinoctial America, and this holds good, both as a general remark, and also of the members of the tribe of Acanthaceæ in particular. See Brown's Appendix to Tuckey's Voyage to the Congo, p. 450 and 478, also Royle's Flora of the Himalaya, p. 159-61. Many of the members of this tribe are possessed of an odour, which is sometimes agreeable, but occasionally very unpleasant; of the former set are the Thunbergia fragrans, Justicia odora, &c. while the latter comprise Ruellia fœtida, R. viscosa, &c.

Introduction; Where grown; Culture. It was first seen in Britain, in 1820; and to the politeness of Mrs. Lawrence, of Drayton Green, we owe the opportunity of figuring this ornamental plant. It is one amongst those climbers which require considerable heat fully to develope their showy character. It should be planted in a large box, or bed of earth, in the pit of the stove, and if its branches be not allowed to become too crowded it will flower freely and show itself to great advantage, through the whole of the summer. It may be increased by cuttings, at all seasons of the year. These should be struck in a sandy compost; and when rooted, potted singly into a mixture of peat and loam.

Derivation of the Names.

In compliment to Ch. P. Thunberg, one of the most celebrated of the pupils of Linneus, and afterwards his successor as Professor of Botany at Upsal. Grandiflora a compound of grandis and flos, to intimate the large size of the flower.

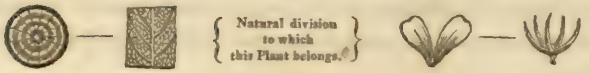
Synonymes.

Thunbergia grandiflora. Roseburgh: Flora Indica. Botanical Register, folio 495. Botanical Magazine, 2366.

ACA'CIA LONGIFO'LIA.

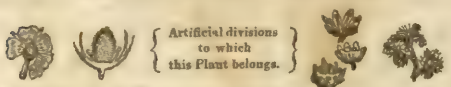
LONG-LEAVED ACACIA.

EXOGENÆ, OR DICOTYLEDONEÆ.



NATURAL ORDER, LEGUMINOSÆ.

CALYCIFLORÆ, OF DECANDOLLE.



POLYGAMIA, MONŒCIA, OF LINNEUS.

No. 77.

GENUS. Acacia. *Necker.* Flores polygami. Calyx 4-5 dentatus. Petala 4-5 nunc libera, nunc in corollam 4-5 fidam coalita. Stamina numero varia 10-200. Legumen continuum exsuccum bivalve. *Decandolle.*

SPECIES. Acacia longifolia. *Willd.* Phyllodiis sublanceolatis utrinque attenuatis integerrimis basi 2-3-nerviis, cæterum submultinerviis, spicis axillaribus binis brevissimè pedunculatis, calyce 4-dentatis. *Decandolle.*

Character of the Genus, Acacia. Flowers polygamous. Calyx 4-5-toothed. Petals 4-5, sometimes free, sometimes united into a 4-5-cleft corolla. Stamens varying in number from 10-200. Pod continuous, dry, two-valved.

Description of the Species, Acacia longifolia. Stem from 10-18 feet high, straight, cylindrical, branched, smooth, of an ashy brown colour. Branches axillary, alternate, articulated. Leaves alternate (Phyllodia) articulated, vertical, lanceolate. Spikes of flowers axillary, seldom solitary, shorter than the leaves, cylindrical, the axes articulated, covered with flowers along their whole length, furnished with bracteas. Flowers sessile, close together, some having stamens only, the greater number possessing both stamens and pistils. Bracteas solitary, at the base of each spike, and of each flower, calyx monosepalous, campanulate, five-toothed, three times shorter than the corolla. Petals five, alternating with the segments of the calyx. Stamens numerous, inserted upon the calyx, united at the base. Anthers straight, roundish, two-lobed, very small. Ovary free. Style lateral, straight, slender, longer than the stamens. Legumen coriaceous cylindrical, pointed, jointed. Flowers of a citron colour, diffusing a faint odour, similar to that of peach-blossoms, owing to the presence of hydrocyanic acid.

Popular and Geographical Notice. The vertical position of the phyllodia or flattened petioles which constitute the whole of the

leaf, by which means each side is presented to the spectator, gives a peculiar aspect to the scenery of New Holland, where these plants abound. The immense number of exhaling pores (Stomata) on both sides of these, by permitting the escape of a large quantity of aqueous vapour, causes a great degree of dampness in the atmosphere in their vicinity.

INTRODUCTION; WHERE GROWN; CULTURE. Introduced in the year 1792. It may be propagated easily by cuttings; or by seeds, which are plentifully produced by this species. It thrives best in a light sandy soil, but will succeed in any. The Acacias require to be very freely watered, during warm dry weather. Our drawing was made in the garden of the Birmingham Botanical Society. Mr. Loudon, in his inestimable Arboretum and Fructicetum Britannicum (now brought to its conclusion) has the following observations on the genus Acacia. "This is a very extensive genus of shrubs or trees, with beautiful foliage and flowers, and of intense interest to the British gardener, because, in mild winters, they are found to live in the open air, as standards, attain a tree-like size in 2 or 3 years, and flower profusely, very early in the spring. They are all of easy propagation, either by cuttings or from seeds, either imported or produced in this country, and their growth is so rapid, that plants 2 years established, have been known to make shoots 16 feet long in one season. In dry sandy soils, and in sheltered situations, the greater number of the species of Acacia might be grown together as a wood or thicket, by which means the plants would protect one another; and though their tops might be annually killed down for 2 or 3 feet by the frost, yet the dead portions being cut off annually, in May, the plants would grow again with vigour. An Australian forest might not be realized in this way in England, but some allusion might be created to an Australian coppice wood." Vol. II, p. 662.

DERIVATION OF THE NAMES.

ACACIA, supposed to be from *ακαξω*, AKAZO to point or sharpen, many of the species having the stipules in the form of sharp thorns. LONGIFOLIA, long-leaved.

SYNONYMES.

ACACIA LONGIFOLIA. Willdenow: Species Plantarum, IV, p. 1052. Sims: Botanical Magazine, 1827 and 2166.

MIMOSA LONGIFOLIA. Andrews: Botanist's Repository, 207. Ventenat: Plantes de Malmaison, 62. Decandolle: Prodromus, II, 457.

MIMOSA MACROSTACHYA. Poiret: Supplement I, p. 61.

Portulaca Gillesii.

Mrs Withers. del

PORTULA'CA GILLIE'SII.

DR. GILLIES' PORTULACA.

EXOGENÆ, OR DICOTYLEDONEÆ.

{ Natural division to which this Plant belongs. }

NATURAL ORDER, PORTULACEÆ.

CALYCIFLORÆ, OF DECANDOLLE.

{ Artificial divisions to which this Plant belongs. }

DODECANDRIA, MONOGYNIA, OF LINNEUS.

No. 78.

GENUS. PORTULACA. *TOURNEFORT.* CALYX aut liber aut imo ovario adhærens, bipartitus, demum basi circumscissus et deciduus. PETALA 4-6 æqualia inter se libera aut imâ basi concreta, calyci inserta. STAMINA 8-15, filamentis liberis interdum imâ corolla adnatis. OVARIUM subrotundum. STYLUS 1 apice 3-6-fidus, aut stylus nullus et stigmata 3-8-elongata. CAPSULA subglobosa 1-locularis medio circumscissa. SEMINA indefinita placentæ centrali adfixa. *DECANDOLLE:* Prodromus, Pars III, p. 353.

SPECIES. PORTULACA GILLIESII. *HOOKER.* Caulibus suberectis basi ramosis, foliis oblongo-cylindraceis subcompressis obtusis punctatis, pilis axillaribus fasciculatis erectis appressis, floribus terminalibus, petalis calyce longioribus.

CHARACTER OF THE GENUS, PORTULACA. CALYX either free, or adherent to the base of the ovary, two-parted, finally cut round at the base, and so deciduous. PETALS 4-6 equal, either unattached to each other, or slightly united at the base, inserted on the calyx. STAMENS from 8 to 15, filaments free, sometimes attached to the base of the corolla. OVARY roundish. STYLE 1, 3-6-cleft at the apex, or the style absent and the stigmata 3 to 8 in number, elongated. CAPSULE subglobose, 1-celled, dehiscing horizontally in the middle. SEEDS indefinite, attached to the central placenta.

DESCRIPTION OF THE SPECIES, PORTULACA GILLIESII. A perennial herbaceous succulent plant, stem erectish, about 12 inches high, purple blotched with white, branched, branches mostly near the base or apex of the stem. LEAVES sparse, sessile, reflexo-patent, on the stem, closer and almost rosulate on the branches, obtuse, roundish, compressed, slightly purple at the top, spotted on the rest of the surface with white dots or lines. HAIRS axillary, erect, white, pellucid. CALYX consisting of two somewhat unequal, oval, membranaceous sepals, with white and scarious margins. PETALS 5, of a rich reddish purple, spreading (under exposure to the strong solar light, at other

times erect or nearly closed) obovate round, notched or undulating. Stamens varying from 8 to 15 or more; filaments purplish; anthers orange-coloured. Ovary roundish; style slender, longer than the stamens; stigmas seven, awl-shaped, reflex, downy or fringed with glandular ? hairs.

Popular and Geographical Notice. This plant is a native of the plains of Mendoza, in South America. It inhabits the most arid localities, and it is only under the influence of the most powerful light, which parches the ground of its place of growth, that it fully unfolds its handsome blossoms, which seem to return the fervid glow of the sunbeams. Few are the hours, and still fewer the days, in this country, that the atmosphere is sufficiently clear, and the light sufficiently strong to cause it to display all its beauties, but even the occasional exhibition which it makes of them will recompense any lover of flowers for the care he may bestow upon it. It is in general between the hours of 9 and 12 that the flowers expand. Portulaca oleracea, and P. flava, when boiled, are eaten as pot-herbs; but little use is made of the species of this genus, though Portulaca curassivica is used in the East Indies, against asthma and inflammation of the liver. Claytonia perfoliata and Claytonia cubensis are esculent, as are likewise the roots of Claytonia tuberosa, and Ullucas tuberosus.

Introduction; Where grown; Culture. Seeds were brought to England, in 1827, by Dr. Gillies. Our drawing was derived from a plant which flowered in August, at Mr. Henderson's Nursery, Pine Apple Place. It is of short duration and should be frequently increased, which may be most easily effected, for a single leaf, when laid upon moist soil, will produce several plants. Except when growing, and setting for flower, it should not be watered, and then only sparingly. It must be kept in the stove, or a very dry greenhouse during the winter.

Derivation of the Names.

Portulaca, a word respecting the origin and meaning of which writers are not agreed: by some it is said to be from porto I carry, and lac, milk. Gilliesii, in compliment to Dr. Gillies, who brought the seeds from Mendoza.

Synonymes.

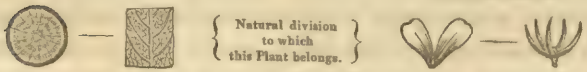
Portulaca Gilliesii. Hooker, in Botanical Magazine, folio 3064. Lindley, in Botanical Register, folio 1672.

Poinsettia pulcherrima

POINSETTIA PULCHERRIMA.

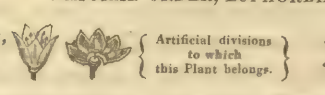
MOST BEAUTIFUL POINSETTIA.

EXOGENÆ, OR DICOTYLEDONEÆ.



NATURAL ORDER, EUPHORBIACEÆ.

MONOCHLAMYDEÆ, OF DECANDOLLE.



DECANDRIA, TRIGYNIA, OF LINNEUS.

No. 79.

GENUS. POINSETTIA. *GRAHAM.* INVOLUCRUM monophyllum, ovatum androgynum, basi 5-loculare, extus appendiculo unico nectarifero. FLORES pedicellati, nudi; masculi bifariam in singulis loculis ordinati, monandri; fœminei solitarii, centrales, germen trilobum; ovulum solitarium singulis lobis. *GRAHAM* in litt.

CHARACTER OF THE GENUS, POINSETTIA. INVOLUCRE monophyllous, ovate, androgynous (bearing both male and female flowers), 5-celled at the base, having a single external nectariferous appendix near the top. FLOWERS pedicellate, naked; the staminiferous flowers arranged in two rows in each compartment, each flower consisting of one stamen (monandrous); the pistilliferous flowers solitary; ovary three-lobed, containing one ovulum in each lobe.

DESCRIPTION OF THE SPECIES, POINSETTIA PULCHERRIMA. An erect shrub, branched, branches hollow, when young obscurely four-angled, green, glabrous. LEAVES scattered, but occasionally opposite, petiolate, petioles from $\frac{3}{4}$ to $1\frac{1}{2}$ inch long, those of the upper leaves reddish, lamina ovato-elliptical, acute, irregularly lobed, or sinuate, mid-rib strong, with numerous nearly parallel lateral ribs, most prominent on the under side, which meet and form a border along the margin of the leaf: leaves soft, slightly fleshy, pubescent on both sides. BRACTS numerous, somewhat similar to the leaves, but narrower, more acute, and less notched, of a brick red (occasionally vermillion) colour, arranged in a more or less roseate manner around the head of flowers. INFLORESCENCE cymose, cyme terminal, subtrifid, articulate, peduncle at length falling off at the joint. INVOLUCRES articulated, on short thick foot-stalks, green, ovate or orbicular, toothed, marked externally with five sutures, with which alternate on the inside five falcate processes, which are narrow at the mouth of the involucre, but widen as they descend towards the lower part, where they meet at a central elevation, so as to divide the lower part of the involucre into five compartments; erect fimbriæ arising from their

REFERENCE TO THE DISSECTIONS.

1, An involucre laid open. 2, A stamen, shewing the articulation, and lobes of one anther.

margins imperfectly divide the upper part of the involucre into a similar number of cells; teeth of the involucre numerous, reddish like the bracts, woolly, connivent. Near the top of the involucre are several appendages, or nectaries, of which four are abortive, and one perfect, which is round, entire, peltate, and so constructed at the margins as to seem two-lipped. STAMINIFEROUS FLOWERS varying from 10 to 14, in double rows in each compartment of the involucre, from the base of which they spring, each accompanied with a scale, which is hairy towards the top; each flower consisting of but one stamen, which is articulated with a small pedicel, filament reddish, anther two-lobed, lobes diverging, dehiscing by a deep furrow along the outside. POLLEN granules yellow, lenticular. PISTILLIFEROUS FLOWERS solitary, central, supported on a short thick pedicel, naked; ovary three-celled, styles three, each style simple (?), bifurcate at the apex.

POPULAR AND GEOGRAPHICAL NOTICE. In Plate 70, we published what we considered a variety of the present plant, under the name of Poinsettia pulcherrima, var. albida, and with this one before them, our readers can judge for themselves whether or not we were correct in deeming the former merely a variety. Less importance should be attached to colour than to any other feature of a plant, and it is probable that the bracts are white in the other plant, owing to its being more delicate. It is perhaps worth mentioning that the bracts of many species of Euphorbia are yellow during the early period of flowering, but afterwards become green; as do the white sepals of the Helleborus niger also change to green, (See Treviranus, Vermischte Schriften, vol. IV, p. 145).

INTRODUCTION; WHERE GROWN; CULTURE. Sent from Mexico to Charles Tayleure Esq., of Toxteth Park, near Liverpool, in 1835. About the same time it was sent by Mr. James Mc Nab, from Philadelphia, to the Edinburgh Botanic Garden. Our drawing was made from a plant belonging to the Messrs. Pope of Handsworth. The gardener of Henry Pratt, Esq. of Philadelphia says he treats it in every respect as a Geranium, except keeping it in the hot-house during winter.

DERIVATION OF THE NAMES.

POINSETTIA, so called in honour of J. R. Poinsett, the United States Consul at Mexico. PULCHERRIMA, superlative of pulcher, fair.

SYNONYMES.

POINSETTIA PULCHERRIMA. Graham: in Edinburgh New Philosophical Journal, March 1836. Graham: in Botanical Magazine, folio 3493.

EUPHORBIA PULCHERRIMA. Wildenow: Herbarium.

EUPHORBIA POINSETTIA. Buist: Mss.

CAROLI'NEA AL'BA.

WHITE CAROLINEA.

EXOGENÆ, OR DICOTYLEDONEÆ.

{ Natural division to which this Plant belongs. }

NATURAL ORDER, STERCULIACEÆ.

THALAMIFLORÆ, OF DECANDOLLE.

{ Artificial divisions to which this Plant belongs. }

MONODELPHIA, POLYANDRIA, OF LINNEUS.

No. 80.

GENUS. Carolinea. *Linneus.* Calyx nudus, subtruncatus, persistens. Petala quinque oblonga longissima. Stamina basi monadelpha superné in adelphias plures dodecandras fasciculata. Stylus longissimus. Stigmata quinque. Capsula lignosa multivalvis, unilocularis, polysperma. Semina nec gossypio nec farinâ induta. *Decandolle* Prodromus Systematis Naturalis Regni Vegetabilis tom. 1, p. 478.

SPECIES. Carolinea alba. *Loddiges.* Foliis septenatis, foliolis elliptico-lanceolatis, corolla extus fasciculato-tomentosa, tubo staminifero longo quinquelobo (nunc vix sinuato?) filamentis dichotomis. *Hooker*: Exotic Flora, vol. 2, plate 100.

Character of the Genus Carolinea. Calyx destitute of bracteæ externally, somewhat truncate, persistent. Petals five, oblong, of considerable length. Stamina monadelphous below, but forming several dodecandrous bundles above, (in the present case this latter circumstance does not exist, or is toô indistinct to be noticed. Willdenow's character is "filamenta ramosa," the filaments branched, which is strictly applicable.) Style of great length. Stigmata five. Capsule woody, multivalvular, of one cell, and with many seeds. Seeds void of all covering, of a cottony or farinaceous description.

Description of the Species, Carolinea alba. Leaf palmate, with seven leaflets, petiole 4 inches; leaflets 3 to 6 inches, scarcely petioled, oblong to elliptic-lanceolate, glabrous, veined, margin very entire. Flower axillary, but close to the extremity of the branch. Peduncle thick, half an inch long. Calyx half an inch long and of

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Reference to the Dissections.

1, The fascicled pubescence on the petals. 2, Grain of pollen. 3, Transverse section of the Ovarium. 4, One of the placentæ and ovules (a) of fig. 3 at the inner end of a dissepiment (b) with a part of the paries (c). 5, Summit of the staminiferous tube opened to shew the manner in which the filaments depart from it. 6. Calyx cut in half, shewing the pistil. 7. The upper forked portion of a filament.

the same breadth, cupshaped, glabrous, truncate with the margin entire, and clothed internally with velvety brown tomentum, except near the base which is also paler. PETALS five, about four inches long, and apparently somewhat coriaceous, linear-oblong, very slightly connected together at the base and to the staminiferous tube; whitish inside and tomentose more than half way down; on the outside densely covered with minute fascicled short and dark brown hair, the fascicles arranged in interrupted subconfluent transversely waved lines; a nearly obsolete channel runs down the middle of the back. TUBE formed by the stamens an inch and a half long, fleshy, with the orifice apparently sinuate or obscurely lobed. Numerous white filaments spring from the extremity and outside of the tube, over a surface of about one quarter of an inch. FILAMENTS two and a half inches long, forked above the middle, each branch bearing a reniform one-celled anther, placed transversely. POLLEN of trigonal vesicles intermixed with waxy matter. OVARY ovato-oblong, pentangular, with five spurious (?) cells, and containing numerous ovules arranged in two lines along each of their innermost angles. STYLE more than three inches and a half, filiform, reddish towards the apex. STIGMA minutely five lobed. N. B. This description is drawn up from an examination of the dried flower and leaf, from which, whilst fresh, the drawing was made.

J. S. HENSLOW.

POPULAR AND GEOGRAPHICAL NOTICE. This genus is confined to the West Indies and other parts of tropical America; and the few species which it includes are all handsome trees with large flowers. It is closely allied to the genus Adansonia, found in Senegal, and which is celebrated for containing the thickest and oldest trees which have hitherto been discovered. As it is unlikely that we shall ever obtain flowering specimens of this "oldest organic monument of our planet" as Humboldt calls it, some notice here, of so extraordinary a production may not be uninteresting to our readers. We copy the substance of the following observations from the first volume of Don's System of Gardening and Botany. Michael Adanson, the celebrated French naturalist, after whom the genus was named, measured several of these trees growing in Africa. They were from 65 to 78 feet in circumference, but very low in proportion. The trunks were from 12 to 15 feet high before they divided into many horizontal branches, which touched the ground at their extremities; these were from 45 to 55 feet long,

and were so large, that each branch was equal to a monstrous tree; and where the water of a neighbouring river had washed away the earth, so as to leave the roots of one of these trees bare and open to the sight, they measured 110 feet long, without including those parts of the roots which remained covered. The tree yields a fruit which resembles a gourd, and which serves for vessels of various uses; the bark furnishes a coarse thread which they form into ropes, and into a cloth, with which the natives cover their middle from the girdle to the knees; the small leaves supply them with food in a time of scarcity, while the large ones are used for covering their houses. The dried leaves, reduced to a powder, constitute halo, a favourite article with the natives of the eastern coast of Africa, and which they mix daily with their food, for the purpose of diminishing the excess of perspiration occasioned by the heat of those climates; even Europeans find it serviceable in cases of diarrhœa, fevers, and other diseases. On the eastern coast of Africa the tree is liable to the attack of a species of fungus, which vegetates in the woody part, and which, without changing its colour or appearance, destroys life, and renders the part so attacked very soft. Such trunks as have been so attacked are hollowed out into chambers, and within them are suspended the dead bodies of those who are refused the honour of burial. There they become mummies perfectly dry and well preserved, without further preparation or embalmment, and are known by the name of guiroits. The farinacious pulp enveloping the seeds tastes somewhat like gingerbread, and is eaten with or without sugar by the natives. At Bangole it forms the principal part of the food of the natives, who season many of their dishes with it, especially a kind of gruel made of corn called rooy. It was the chief support of Major Pedley's expedition for 10 or 12 days. In our own country many vegetable monuments of great antiquity exist, particularly among Yew-trees. Those of Fountain's Abbey, in Yorkshire, are believed to be more than a thousand years old; Adanson, however, calculates that the age of some of the African trees to which we have alluded, could not be less than five thousand years.

Introduction; Where grown; Culture. The present specimen was sent us by Mr. Sheppard of the Liverpool Garden, who states that "he raised it from seeds sent from Trinidad by the late Baron de Shack, under the name of Bombax quadrangularis. The plant is now about 8 feet high with spreading branches, the young ones being very

glaucous. It loses its leaves in the winter, and in its native country is probably quite denuded at the time of flowering. The petals are erect at first, but soon become reflexed. It is not unlike the Carolinea alba of Hooker's Exotic Flora, but that plant is of much larger growth." Notwithstanding this latter circumstance, we cannot observe a sufficient difference between these plants to warrant our considering them as distinct species. The number of the subordinate parts of the pistil and the degree of development in the lobes of the stigma are very variable characters; but beyond these, the chief difference in our descriptions of the present flower and that of Dr. Hooker, consists in our specimen having the inner surface of the Calyx and petals clothed with a velvety tomentum. Dr. Hooker has noticed the close resemblance which exists between C. alba and C. insignis, the flowers of the latter however being twice the size of the former, and the tomentum on the petals not in fascicles. The flowers of our plant are still smaller than those of Dr. Hooker's, and although the tomentum is distinctly fascicled in many places, yet in others it loses this character, probably from the fascicles being so much crowded that they cannot be distinctly observed. From these circumstances we cannot help suspecting that C. alba may after all be a dwarf form of C. insignis. Dr. Hooker remarks (apparently from examining the ovarium only) that "in having cells to the fruit, this plant departs from the generic character of Carolinea" and he has figured the ovules attached in several rows to a large central placenta. But it may be observed that this central placenta readily separates into as many subordinate portions as there are dissepiments, forming so many distinct placentæ at their inner edge, to which the ovules are attached in double rows. So far then as the examination of a dried specimen may enable us to judge, these separate placentæ do not cohere into a solid central column. It seems therefore extremely probable that in the ripened capsule both the dissepiments and central mass may be so far obliterated or modified, as to give the pericarp the character of a unilocular fruit, as in the other species from which the generic character has been framed.

Derivation of the Names.

Carolinea in honour of the Princess Sophia Caroline of Baden. Alba white, from the colour of the inner surface of the petals.

Synonymes.

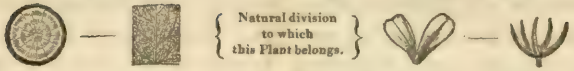
Carolinea alba. Loddiges's Botanical Cabinet, vol. 8, Pl. 752. Hooker's Exotic Flora, vol. 2, plate 100.

Bossiaea rufa.
Miss Taylor del

BOSSIÆ'A RU'FA.

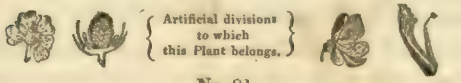
RUFOUS BOSSIÆA.

EXOGENÆ, OR DICOTYLEDONEÆ.



NATURAL ORDER, LEGUMINOSÆ.

CALYCIFLORÆ, OF DECANDOLLE.



DIADELPHIA, DECANDRIA, OF LINNEUS.

No. 81.

GENUS. Bossiæa. *Ventenat.* Calyx bilabiatus, labio superiore majore semibifido obtuso. Stamina omnia connexa. Legumen plano-compressum pedicellatum polyspermum, margine utroque incrassatum. Semina strophiolata. *Decandolle*: Prodromus Systematis Universalis Regni Vegetabilis, II, p. 116.

SPECIES. Bossiæa rufa. *Loddiges.* Ramis complanatis linearibus aphyllis, denticulis floriferis, carina subnuda, bracteis superioribus ab inferioribus distantibus pedicello brevioribus. *Decandolle.* Prodromus, II, p. 117.

Character of the Genus, Bossiæa. Calyx two-lipped, the upper lip larger, nearly two-cleft, obtuse. Stamens united into a monadelphous tube. Pod flatly compressed, stalked, many-seeded, both margins thickened. Seeds strophiclated.

Description of the Species, Bossiæa rufa. A shrub with straggling branches, nearly two feet high; branches leafless, flat, compressed, or more properly roundish, narrow, and winged on each side owing to the base of each branch being decurrent, the wings toothed, and bearing the flowers, which are placed in the teeth of the upper branches. Flowers axillary pedicellate, bracteolated: the bracts of two pairs, the one pair at the base of the pedicel, the other pair remote, placed about mid-way between the first and the calyx, and shorter than the pedicels: flowers solitary, rarely extending to the extremity of the branch. Calyx slightly pubescent, two-lipped, upper lip larger, obscurely two-cleft, obtuse, under lip also somewhat two-cleft, and more acute. Corolla papilionaceous, standard large, spreading or reflexed with a long slender claw, limb emarginate, dingy yellow, with a brownish spot at the base and reddish brown lines diverging thence to the margin; wings small, obtuse, yellow, carina

Reference to the Dissections.

1, The Standard. 2, one of the wings. 3, one half of the keel. 4. ovary and style. 5, a pedicel with upper bracts, calyx and stamens.

(keel) of two petals, slightly cohering near the apex, claw long, slender, limb broad, obtuse, brownish purple. STAMENS forming a tube round the pistil. OVARY very slender. STYLE subulate.

POPULAR AND GEOGRAPHICAL NOTICE. New Holland is the native land of this, as well as nearly all the species of Bossiæa. It differs from the plant represented in plate 68, by belonging to the leafless section. The name which was given to this plant by Siebold in his collection of dried plants of New Holland is preferable to that which it bears at the head of this article. He termed it Bossiæa *ensata,* or *Sword branched* Bossiæa, which is highly characteristic of its appearance, and the adoption of which would prevent any confusion with the species Bossiæa *rufa* of Robert Brown, which, however, very greatly resembles this plant, differing only in the keel being fringed, and the upper bracts being deciduous, and having the calyx smooth. This plant corresponds with the Bossiæa rufa, of Loddiges' Botanical Cabinet, plate 1119.

INTRODUCTION; WHERE GROWN; CULTURE. It was first raised in Britain in 1825. The plant from which our representation was taken flowered in May, 1837, as one of the many ornaments of the superb Conservatory of Wm. Leaf Esq., Parkhill, Streatham, which has so often furnished subjects for our pages. It will prosper best if planted out in the border of the conservatory, in a mixture of light loam with a little peat. Young plants may be raised from cuttings, but seedlings will not only make the handsomest, but the most free growing shrubs.

DERIVATION OF THE NAMES.

BOSSIÆA, from M. Bossieu, a companion of La Perouse. RUFA, from the brownish colour of the flowers.

SYNONYMES.

BOSSIÆA RUFA, Loddiges's Botanical Cabinet, 1119.

BOSSIÆA ENSATA, Siebold: Pl. exsiccated, No. 434. Sweet: Flora Australasica, 5, 1. Decandolle: Prodromus, II, p. 117. George Don: Dictionary of Gardening and Botany, vol. II, p. 128.

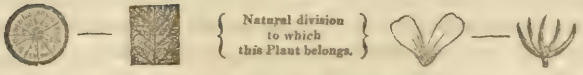
Crusca rubra

Bourne del

CRU'SEA RU'BRA.

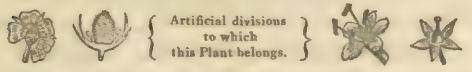
PINK-FLOWERED CRUSEA.

EXOGENÆ. OR DICOTYLEDONEÆ.



NATURAL ORDER, RUBIACEÆ.

CALYCIFLORÆ, OF DECANDOLLE.



TETRANDRIA, MONOGYNIA, OF LINNEUS,

No. 82.

GENUS. CRUSEA. *CHAMISSO ET SCHLECHTENDAHL.* CALYCIS tubus ovato-didymus, supra ovarium constrictus, limbus profunde quadrifidus, laciniis lanceolatis linearibusve hirtis, plurimis accessoriis minimis. COROLLA hypocrateriformis, tubo elongato apice obconico, fauce glabra, limbo quadrifido. STAMINA exserta. STYLUS exsertus, apice breviter bifidus. FRUCTUS coccis 2 indehiscentibus monospermis ab axi persistente plano membranaceo calycem persistentem retinente demum solutus.

SPECIES. CRUSEA RUBRA. *CHAMISSO ET SCHLECHTENDAHL.* CAULE herbaceo tetragono hispido, ramis oppositis, foliis ovatis acuminatis hirsutis, nervis utrinque obliquis, stipularum setis 7-9 hispidis. *DECANDOLLE*: Prodromus v. 4, p. 567.

CHARACTER OF THE GENUS, CRUSEA. TUBE of the calyx contracted above the ovary, limb deeply 4-cleft, the divisions lanceolate or linear and hispid, with many small accessary teeth between them. COROLLA salver-shaped with a long tube widened at the top, the throat without hairs, the limb 4-cleft. STAMENS exserted. STYLE exserted, shortly 2-cleft at the top. FRUIT dividing when ripe into two one-seeded indehiscent nuts, separating themselves from a plane membranaceous axis which remains with the persistent limb of the calyx.

DESCRIPTION OF THE SPECIES, CRUSEA RUBRA. ANNUAL, erect, of several feet in height. BRANCHES numerous, opposite, square, covered with long stiff white somewhat reflexed hairs, each rising from a small tubercle. LEAVES opposite, an inch and a half to two inches long, ovate or somewhat oblong, acuminate, entire, rounded or contracted at the base into a leaf-stalk from three to six lines long, hairy on both surfaces, the under side paler green than the upper, nerves diverging from the midrib, prominent and very hairy underneath. STIPULES connected with the base of the petioles in a membranous hispid sheath bordered on each side by 7, 8, or 9 erect hispid setæ. HEADS of flowers terminal, surrounded by an involucre of from four to seven leaves resembling those of the stem, but narrower and very unequal in size. FLOWERS pink resembling in aspect those of a Pimelea. CALYX sessile on the receptacle, intermixed with long white

and usually branching setæ; tube short, hairy; divisions of the limb rather longer than the tube, linear, two rather shorter than the other two. Tube of the corolla about half an inch long, slender, perfectly smooth, slightly dilated at the top, divisions four, oblong, spreading. Stamina inserted into the throat of the corolla and rather longer than its divisions; filaments slender, glabrous; anthers oblong-linear, purplish. Style about the length of the stamens, often shorter, cleft at the top into two recurved divisions, lined on the inner side with the stigmatic surface.

Popular and Geographical Notice. The small genus Crusea appears to be confined to the Mexican states, extending perhaps as far as the neighbouring island of Cuba, for the three Cape species lately added by Ernst Meyer from amongst Drège's collection differ much in the calyx, corolla, and inflorescence, and evidently form a new genus. The present species and two other Cruseas from the same country, are perhaps the only plants among the numerous tribe of Spermacoceæ worth cultivating, a tribe so generally remarkable for their weedy appearance, and which in the warmer parts of America and Asia, appear to take the place of our Galiums and Asperulas, but with a much coarser foliage and very small white or bluish flowers. The Cruseas, on the contrary, have all of them much larger flowers, of a pink or scarlet colour, especially the C. coccinea, which is perennial and has flowers nearly double the size of C. rubra, and which it would be highly desirable to introduce into this country.

The Spermacoceæ form one of thirteen distinct tribes, constituting the very extensive and well marked Order of Rubiaceæ, originally proposed by the elder Jussieu, and retained in its full integrity by Chamisso and Schlechtendahl, Achille Richard, and Decandolle, all of whom, especially the author of the Prodromus, have illustrated the Order in detail. Lindley, however, in his Natural System, a work remarkable for the clear and concise manner in which the characters, affinities, and anomalies, of the Natural Orders are expounded, differs from all these authors in considering the Tribe of Stellatæ (including Rubia itself) as a distinct Order, and consequently changes the name of the remaining portion of the Order to that of Cinchonaceæ. But in this view, it is difficult to agree with him, great as his authority must be considered in most cases. The grounds of his opinion are thus stated in speaking of Stellatæ. "Usually a material dissimilarity in habit, if accompanied by any clear character, whether of vegetation or fructification, is considered sufficient ground for the separation of a group of plants into two Orders; in this case the weak angular stems cause a peculiarity of habit that cannot be mistaken, and the total absence of stipules, to say nothing of the didymous fruit, afford a certain mark of recognition. Surely there is some inconsistency in separating, by the absence of stipules, Caprifoliaceæ which are indistin-

guishable in habit, while the very same character is rejected when applied to the separation of an assemblage of genera, all distinctly combined by their habit." The opinion of Decandolle and others, that the apparent leaves of Stellatæ are in part true leaves and in part leaf-like stipules, is thus objected to. If a part of the leaves of each whorl of Galium were stipules, they must bear a certain proportion to the true leaves; suppose the whorl to consist of two leaves, each will have two stipules, and consequently the whole number of parts in the whorl must be six, and in all cases the number must be some power of three. The frequent tendency in the whorls to vary from 4 to 6, or from 5 to 6, or from 6 to 8, seems to me an incontrovertible proof that the apparent leaves of Stellatæ are true leaves and not a modification of stipules."

The weak angular stems and didymous fruit of Stellatæ are very common in two other tribes retained by Lindley in his Cinchonaceæ, viz. the Spermacoceæ, and the Anthospermeæ, and the whole of the latter tribe, and many of the Spermacoceæ, have precisely the habit either of some Galia, or more frequently of the Asperulæ; There remains therefore the sole question, whether the whorl of leaves in Stellatæ, consists of two true leaves, and two or more leaf-like stipules, or of four or more true leaves without stipules. In the first place it may be observed, that in most Dicotyledoneæ, where the leaves are verticillate, the number of leaves in each whorl bears a regular proportion to that of the angles of the stem, either the same number, double the number, or half the number; the stem of Stellatæ is almost always quadrangular, and the number of leaves varies from 4 to 10 or 12; which is a strong indication that only two or four are true leaves, and this is confirmed by the number of cases (especially in Asperula) where two opposite leaves are much larger than the others. In the next place, comparing Stellatæ to the nearest Tribes of Lindley's Cinchonaceæ we observe in many of these, especially in Hedyotideæ, Coffeaceæ, Spermacoceæ, and Anthospermeæ, that the stipules are connected with the petioles of the leaves into one sheath, often very short, from the margin of which arise two opposite leaves, and between the leaves on each side, one, two, three, four, or more teeth or setæ, these teeth or setæ are generally, it is true, either membranous or very slender, but they not unfrequently are to a certain degree foliaceous, and in Gaillonia they are sometimes small and setiform, sometimes exactly like the true leaves. So in Stellatæ the apparent leaves are all connected together at the base in a sheath, very short it is true, but almost always evident, and the lateral leaves supply the place of the teeth or setæ in the other tribes. Thus, when the whorl consists of four, there are two real leaves and one stipulary process on each side, as in most Anthospermeæ and many Hedyotideæ, Coffeaceæ, &c.; where the whorl consists of six, there are two stipulary processes on each side, as in

many Coffeaceæ; and where there are eight, ten, or more, apparent leaves, three, four, or more, on each side of the true ones must be considered as stipulary processes, similar to the setæ of Hedyotideæ and Spermacoceæ. The few cases where the number of leaves in the whorl of a Galium is uneven, are probably due to accidental abortion, as they are very inconstant, not only in the same species, but in the same plant.

As to Caprifoliaceæ, they are certainly closely allied to Rubiaceæ, and perhaps in this case, as in that of many of the most Natural Orders, a precise artificial line would be difficult to draw, but independently of the almost constant absence of stipules, there is on the one hand (as observed by Lindley) an approach in habit and structure to Saxifragaceæ, and in another point of view, the ordinary carpellary number of Caprifoliaceæ is three, and that of Rubiaceæ but two. G. B.

Introduction; Where grown; Culture. The first introduction of Crusea rubra into European gardens was about the year 1797, when it was cultivated in the Botanic Garden of Schoenbrunn, where the elder Jacquin figured it in the third volume of his Hortus Schoenbrunnensis; a much less elegant variety appeared in our own gardens in the year 1812, and was figured in the Botanical Magazine, t. 1558. Our drawing was made in the Glasnevin Botanic Garden, and was accompanied by the following notes from Mr. Niven. "It was raised from a parcel of mixed seed, said to be collected in the interior of Mexico. It is an annual, grows to the height of from five to six feet, if properly shifted; is a plant of very handsome growth, being regularly furnished with opposite side shoots from the surface of the pot upwards. Flowers during the months of October and November in great beauty. One specimen which flowered here this season, could not have less than 300 heads of flowers such as those in the figure. The plant grows freely in sandy loam with a little peat, it flowered in great perfection in a dry part of the stove; seeds freely, and strikes from cuttings. The habit of the plant in summer, with its beautiful foliage and very curiously armed stem, is highly attractive. It is a valuable ornament, as it comes into flower in rich profusion at a time when the stove is rather barren of flowering plants."

Derivation of the Names.

Crusea, in honour of Dr. Cruse of Kœnigsberg, author of a dissertation on Cape Rubiaceæ, in which he first indicated the present genus. Rubra, red, from the red colour of the flowers.

Synonymes.

Spermacoce rubra. Jacquin: Hortus Schoenbrunnensis, vol. III, t. 256.

Spermacoce strigosa. Sims: Botanical Magazine, t. 1558.

Crusea rubra. Chamisso and Schlechtendahl: Linnæa, vol. V, p. 165. Decandolle: Prodromus, vol. IV, p. 567.

Kennedya Marryattiana

KENNE'DYA MARRYATTIA'NA.

MRS. MARRYATT'S KENNEDYA.

EXOGENÆ. OR DICOTYLEDONEÆ.

{ Natural division to which this Plant belongs. }

NATURAL ORDER, LEGUMINOSÆ.

CALYCIFLORÆ, OF DECANDOLLE.

{ Artificial divisions to which this Plant belongs. }

DIADELPHIA, DECANDRIA, OF LINNEUS.

No. 83.

GENUS. KENNEDYA. *VENTENAT.* CALYX ad medium fissus, bilabiatus, labio superiore bidentato, inferiore tripartito. COROLLÆ vexillum breviter unguiculatum, obovato-oblongum, alis subæquilongum, reflexum, basi angustatum, biappendiculatum. ALÆ carinæ ultra medium adhærentes. CARINA elongato-oblonga, hinc recta, extus apice parum incurva, acuta, alas æquans vel superans. STAMINA distincte diadelpha; filamento vexillari basi recto inarticulato. OVARIUM pluriovulatum. STYLUS elongatus, filiformis, apice sub-incurvus, attenuatus, stigmate parvo obtuos. LEGUMEN oblongo-lineare, subcompressum, intus isthmis cellulosis multiloculare. SEMINA strophiolata. FRUTICES volubiles vel prostrati. FOLIA pinnatim trifoliolata, rarius nonnullis unifoliolatis, stipellata. PEDUNCULI axillares, pauciflori, bracteati. FLORES ampli rubri vel violacei. *BENTHAM* in the Annalen des Wiener Museums, v. II, p. 122.

SPECIES. KENNEDYA MARRYATTIANA. *LINDLEY.* FOLIOLIS tribus oblongo-ovatis obtusis undulatis petiolo brevioribus, junioribus calycibusque villosissimis, stipulis bracteisque cordatis apiculatis, pedicellis bi-quadrifloris, leguminibus villosis.

CHARACTER OF THE GENUS, KENNEDYA. CALYX deeply two-lipped, upper lip with two teeth, lower three-cleft. STANDARD with a short claw, obovate-oblong, about equal in length to the wings, bent back, narrowed at the base with two small inflexed appendages. WINGS, adhering to the keel, which is as long or longer than them, oblong, straight on the inner edge, the outer edge narrowed to the point. STAMENS distinctly diadelphous, the upper free filament straight at the base and not articulate. OVARY containing several ovules. STYLE long, filiform, slightly incurved and slender at the apex, with a very small obtuse stigma. LEGUME oblong-linear, usually compressed, divided transversely by a cellular substance into several spurious cells. SEEDS with a strophiola.

DESCRIPTION OF THE SPECIES, KENNEDYA MARRYATTIANA. A rather coarse climber; the stems, under side of the leaves, peduncles, calyces, and legumes, thickly covered with white, spreading, short hairs. LEAVES alternate. STIPULES very broad, foliaceous, acuminate at the top, broadly heart-shaped at the base. PETIOLES an inch and

a half to two inches long, bearing three leaflets, two opposite to each other, with one stipella at the base of each, the third terminal at some distance from the lateral ones, with two stipellæ at its base. LEAFLETS obovate, or oblong, blunt or slightly emarginate, sometimes with a small point, undulate on the edges, smooth on the upper surface, hairy underneath, an inch to an inch and a half long. PEDUNCLES axillary, shorter than the leaves, bearing two or four flowers, with one or two pair of bracteæ connected into one orbicular one, and two small bracteolæ at the base of each pedicel. FLOWERS large, of a rich scarlet, the standard having a double orange spot in the centre. KEEL rather longer than the wings, and almost straight. LEGUME about an inch and a half long, compressed, or nearly cylindrical, but not inflated, very hairy.

POPULAR AND GEOGRAPHICAL NOTICE. This is a true Kennedya, as this genus is proposed in the above quoted memoir, to be limited. The small blue-flowered species are there included under the name of Hardenbergia; those with bunches of scarlet flowers and short keels under that of Zichya; and others again with inflated pods as Physalobium. The remaining Kennedyas consist of five or six species, which appear to be coast plants, most of them being found trailing on sandy ground. They are most of them showy, but less so than the Hardenbergiæ and Zichyæ, for the peduncles bear but few flowers, and unless treated and trained with care many of them remain concealed by a rather coarse foliage. We have, however, seen specimens of the present species in great beauty. G. B.

INTRODUCTION; WHERE GROWN; CULTURE. The Kennedya Marryattiana was first raised in the year 1836, by Mr. Robert Mangles, and in the gardens of Mrs. Marryatt, from seeds sent home by Sir James Sterling, and has since spread into most considerable collections. It is easily propagated by cuttings, and also ripens its seed occasionally, from which source some very slight varieties have been obtained. It should be potted in peat, loam, and sand, and have greenhouse protection. Our drawing was made from specimens in the garden of Robert Barclay, Esq. of Leyton, Essex.

DERIVATION OF THE NAMES.

KENNEDYA named by Ventenat, in honour of Mr. Kennedy, at that time partner with Mr. James Lee, in the Establishment of Messrs. Lee and Kennedy, Hammersmith. MARRYATTIANA, in honour of Mrs. Marryatt, of Wimbledon, a most zealous cultivator of rare plants.

SYNONYMES.

KENNEDYA MARRYATTÆ. Lindley: Botanical Register, t. 1790.